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1902/03

UNIVERSITY OF CALIFORNIA

MEDICAL DEPARTMENT

Announcement of Courses

1902-1903

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JUNE, 1902

PUBLISHED BY
McNUTT, KAHN & CO.
STATIONERS AND PRINTERS
306 MARKET ST., S. F.

Letters of inquiry concerning the Medical Department should be addressed to Dr. A. A. D'Ancona, Dean, Medical Department, University of California, San Francisco, Cal.

UNIVERSITY OF CALIFORNIA

ANNUAL ANNOUNCEMENT
OF
COURSES OF INSTRUCTION

IN THE DEPARTMENT OF MEDICINE

FOR THE ACADEMIC YEAR

1902-1903

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CALENDAR.

1902

Aug. 8, Friday	Academic year in the Medical and Academic Departments begins.
Aug. 8, Friday Aug. 12, Tuesday	Entrance examinations at Berkeley for the Medical and Academic Departments.
Aug. 11, Monday Aug. 16, Saturday	Examination of conditioned students of advanced classes.
Aug. 14, Thursday Aug. 15, Friday Aug. 16, Saturday	10 A. M. to 2 P. M. Applications for admission to the Medical Department; filing of credentials from accredited high schools and colleges; registration of students of all the classes of the Medical Department; payment of fees.
Aug. 18, Monday	Class work begins.
Aug. 20, Wednesday	11 A. M. Opening exercises.
Sept. 9, Tuesday	Admission Day—a holiday.
Nov. 27, Thursday	Thanksgiving Day—a holiday.
Dec. 22, Monday	Christmas vacation begins.

1903

Jan. 5, Monday	Second term begins.
March 23, Monday	Charter Day—a holiday.
April 1, Wednesday	Summer course in histology, anatomy, physiology, pathology and bacteriology for graduates and advanced students.
May 4, Monday	Examinations begin.
May 16, Saturday	Term ends.

REGENTS OF THE UNIVERSITY.

EX-OFFICIO REGENTS.

His Excellency Henry T. Gage, - - - - Sacramento
Governor, ex-officio President of the Regents.

His Honor Jacob H. Neff, 1154 O'Farrell St., San Francisco
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Hon. Cornelius W. Pendleton, - - - - - Los Angeles
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President of the Mechanics' Institute.

Benjamin Ide Wheeler, Ph.D., LL.D., 1820 Scenic Ave., B'k'ly.
President of the University.

APPOINTED REGENTS.

The names are arranged in the order of original accession to the Board.

Name.	Address.	*Term Expires.
Isaias William Hellman, Esq.,	Nevada Nat'l. Bank, S. F.,	1918
Arthur Rodgers, B.S., Ph.B.,	309 Montgomery St., S. F.,	1906
Jas. Franklin Houghton, C.E.,	328 Montgomery St., S. F.,	1904
Chester Rowell, M.D., - -	Fresno, - - - - - - -	1910
Hon. James A. Waymire, -	Alameda, - - - - -	1908
Hon. Charles William Slack Ph.B., LL.B.,	309 Montgomery St., S. F.,	1910
Jacob Bert Reinstein, M.A.,	217 Sansome St., S. F. -	1912
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Mrs. Phœbe A. Hearst, - -	Mills Bldg., San Francisco,	1914
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George C. Pardee, M.A., M.D.,	Chronicle Building, S. F.,	1914

*Terms of Regents expire March 1.

Arthur W. Foster, Esq., -	Mutual Life Bldg., S.F.,	1916
C. N. Ellinwood, M.D., - -	2739 Pacific Ave., S. F., -	1908
Garrett McEnerney, LL.B., -	Nevada Block, S. F.,	1904
Charles Stetson Wheeler, A.B.,	532 Market St., S. F., -	1906
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Acting Secretary and Land Agent.

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Clerk in Secretary's Office.

Harrie Lynwood Wright, 525 Twenty-second St., Oakland
Clerk in Secretary's Office.

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John J. Herr, - - - - - - 340 Geary St., San Francisco
Auditor.

Rebecca Meyerstein, - - 2116 Mission St., San Francisco
Stenographer in Secretary's Office.

Louis Sloss, - - - - - - 310 Sansome St., San Francisco
Treasurer.

John Bell Mhoon, - - - 401 California St., San Francisco
Counsel.

*Absent on leave.

FACULTY.

BENJAMIN IDE WHEELER, LL.D., Ph.D., President of the University, ex-officio President of the Faculty.

ARNOLD A. D'ANCONA, A.B., M.D., Professor of Physiology; Dean.

ROBERT A. McLEAN, M.D., Professor of Clinical and Operative Surgery.

GEORGE H. POWERS, A.M., M.D., Professor of Ophthalmology and Otology.

WM. WATT KERR, A.M., M.B., C.M., Professor of Clinical Medicine.

DOUGLASS W. MONTGOMERY, M.D., Professor of Dermatology.

WASHINGTON DODGE, M.D., Professor of Therapeutics.

JOHN M. WILLIAMSON, M.D., Professor of Genito-Urinary Surgery.

JOHN W. ROBERTSON, A.B., M.D., Professor of Nervous and Mental Diseases.

HARRY M. SHERMAN, A.B., M.D., Professor of the Principles and Practice of Surgery.

ALONZO ENGLEBERT TAYLOR, M.D., Professor of Pathology.

WM. E. HOPKINS, M.D., Clinical Professor of Ophthalmology and Otology.

CHAS. A. VON HOFFMANN, M.D., Professor of Gynecology.

HERBERT C. MOFFITT, B.S., M.D., Professor of the Principles and Practice of Medicine.

JOSEPH MARSHALL FLINT, B.S., A.M., M.D., Professor of Anatomy.

WM. B. LEWITT, M.D., Professor of Pediatrics.

THOS. W. HUNTINGTON, A.B., M.D., Professor of Clinical Surgery.

LEO NEWMARK, M.D., Professor of Clinical Neurology.

FRANK T. GREEN, Ph.G., Associate Professor of Physiological Chemistry.

GEO. F. SHIELS, M.D., F.R.C.S.E., Etc., Associate Professor of the Principles and Practice of Surgery.

BEVERLY MACMONAGLE, M.D., Lecturer on Gynecology.

JAMES F. McCONE, B.S. M.D. M.R.C.S. Eng., Lecturer on Obstetrics.

Charles L. Morgan, A.B., Ph.G., M.D., Lecturer on Materia Medica.

Louis De F. Bartlett, A.B., LL.B., Special Lecturer on Medical Jurisprudence.

Irving Hardesty, A.B., Ph.D., Instructor in Anatomy.

J. Henry Barbat, Ph.G., M.D., Instructor in Surgery.

Samuel J. Hunkin, M.D., Instructor in Orthopedic Surgery.

Richard M. H. Berndt, M.D., Instructor in Therapeutics.

Henry A. L. Ryfkogel, M.D., Instructor in Pathology.

Harold P. Hill, A.B., M.D., Instructor in Physiology.

Harold Brunn, M.D., Instructor in Surgery.

Clarence Quinan, M.D., Instructor in Medicine.

George E. Ebright, M.D., Instructor in Medicine.

Wallace I. Terry, M.D., Assistant in Surgery.

Robert Orton Moody, B.S., M.D., Assistant in Anatomy.

Stephen Cleary, M.D., Assistant in Anatomy.

Fred. C. Burrows, A.M., M.D., Assistant in Medicine.

Geo. F. Reinhardt, B.S., M.D., Assistant in Medicine.

Chas. M. Cooper, M.R.C.S. Eng., Assistant in Medicine.

Alfred Newman, A.B., M.D., Assistant in Surgery.

Henry B. A. Kugeler, M.D., Assistant in Surgery.

Oscar N. Taylor, A.B., M.D., Assistant in Medicine.

Wm. E. Stevens, M.D., Assistant in Medicine.

James P. Dunn, M.D., Assistant in Surgery.

Chas. G. Levison, M.D., Assistant in Surgery.

Marshall B. Ryer, M.D., Assistant in Surgery.

John C. Spencer, M.D., Assistant in Genito-Urinary Surgery

Cecil M. Armistead, M.D., Assistant in Genito-Urinary Surgery.

George H. Richardson, M.D., Assistant in Genito-Urinary Surgery.

George W. Merritt, M.D., Assistant in Ophthalmology.

Hugh Lagan, M.D., Assistant in Ophthalmology.

Robert H. Orr, M.D., Assistant in Ophthalmology.

Gardner P. Pond, M.D., Assistant in Otology, Laryngology and Rhinology.

J. Mora Moss, M.D., Assistant in Gynecology.

Z. T. Malaby, M.D., Assistant in Gynecology.

Alfred B. Grosse, M.D., Assistant in Dermatology.

Ernest Pring, M.D., Assistant in Dermatology.

Howard Morrow, M.D., Assistant in Dermatology.

John J. Flood, M.D., Assistant in Orthopedic Surgery.

Sanford Blum, A.B., M.D., Assistant in Pediatrics.

J. Wilson Shiels, M.D., Assistant in Medicine.
George J. McChesney, A.B., M.D., Assistant in Medicine.
Wm. G. Moore, M.D., Assistant in Gynecology.
E. L. Wemple, Jr., M.D., Assistant in Genito-Urinary Surgery.

SPECIAL ANNOUNCEMENT.

At a recent meeting of the Board of Regents of the University of California it was voted to establish a Department of Physiology on an academic basis to be provided for in the general budget of the University. Inasmuch as this announcement went to press just after the action of the Board of Regents and before the appointments in this department could be made, the work in Physiology scheduled in the present announcement will be subject to revision. Special announcement of the plans of the department will be made at the beginning of the next academic session, after the appointments have been made and the Physiological Laboratory equipped. In this connection it is a pleasure to announce that Dr. M. Herzstein of San Francisco has generously donated the necessary funds for the complete and adequate equipment of this department, which it is believed will be one of the best in the country. This will, of course, be a University Department conducted according to the highest standards and will control all of the work in Physiology offered by the University of California.

each year; but the examinations in January are primarily for the purpose of enabling students in the University to remove deficiencies incurred in previous entrance examinations. Applicants for admission who present certificates from their teachers that they are prepared in the subjects they offer will be admitted to the January examinations. Such certificates must be filed with the Recorder of the Faculties, Berkeley, before the examinations.

In 1902, examinations will be held in Berkeley, August 8–12. The University may conduct entrance examinations at the same time in any city or at any school where the number of candidates and the distance from other places of examination may warrant it. Applications for this purpose should be sent to the Recorder of the Faculties, Berkeley, by mail, not later than June 1.

After passing the entrance examinations students who do not register in the office of the Dean of the Medical Department by September 1st will be denied admission to regular class standing unless they obtain special permission from heads of the departments in which they begin their work.

Matriculants who do not present satisfactory credentials are required to pass the examinations in the subjects named below. Subjects: 1, 2, 3, 4, 5, 6a, b, and c; 11; 8 or 14 or 15a, or 15b, and either 10 and 13 or two of the main subdivisions (a, b, c, d) of 12.

A. **Oral and Written Expression.**—Training in this subject enters into the proper treatment of all topics of study taken up in the school course and extends to speaking and oral reading as well as to writing. Its aim is to secure to the student the ability to use his mother-tongue correctly, clearly, and pertinently on all lines upon which his thought is exercised.

A written test in this subject is required of all applicants for the status of special student in the Colleges of Letters, Social Sciences, Natural Sciences, and Commerce, excepting only those who hold teachers' certificates. In the case of other applicants, for the present no separate examination will be set, but note will be made of correctness of form and adequacy of expression in the various papers written by each.

1. **English.**—(2 units.) The examination in this subject will presuppose thorough acquaintance with the following works, together with the practical knowledge of grammar and elementary rhetoric implied in such acquaintance: (1) The Lady of the Lake; (2) The Alhambra; (3) Sir Roger de Coverley; (4) Classic Myths; (5) Short Poems; Horatius, The Deserted Village, The Cotter's Saturday Night, The Prisoner of Chillon (or Selections

from Childe Harold), Winter, Winter Morning Walk, Snow-Bound, Tam O'Shanter, The Ancient Mariner, L'Allegro, and Il Penseroso; (6) The Merchant of Venice; (7) Julius Caesar; (8) Macaulay's Warren Hastings.

While the regular examination will, for the present, be upon these subjects without option, schools on the accredited list of the University may, after consultation with the English Department, make such substitutions as the following: for (1), The Lay of the Last Minstrel; for (2), Tom Brown at Rugby, or Ivanhoe; for (3), Addison's Select Essays; for (5), some twelve poems of similar scope and character; for (6) or for (7), Macbeth.

2. **Arithmetic.**—No examination in this subject will henceforward be set, since the study comes regularly in the grammar school, and since its essential processes are involved in Algebra.

3. **Algebra.**—(1½ units). Through Quadratic Equations; namely, the various methods of factoring, the theory of exponents, integral and fractional, positive and negative; the calculus of radicals; ratio and proportion; quadratic equations, both single and simultaneous, their solution and their theory, including all the recognized methods of solution, all equations reducible to the quadratic form and the formation of equations from given roots.

4. **Plane Geometry.**—(1 unit.) Including the general properties of regular polygons; their construction, perimeters and areas; and the different methods for determining the ratio of the circumference to the diameter.

5. **History and Government of the United States.**—(1 unit.) A knowledge of the outline of American History, and of the nature of Federal, State and local government.

6. **Latin.**—(*a*) Cæsar, Gallic War, Books I–IV; (*b*) elementary Latin Grammar, forms and syntax; (*c*) translation into Latin of simple English sentences.

While the regular examination will be confined to the books of Cæsar, teachers of approved ability, in schools on the accredited list of the University, may, after consultation with the Latin Department, substitute any ten† Biographies of Nepos for two books of the Gallic War.

8. **Greek.**

(*a*) Greek Grammar, including accents, the ordinary inflectional forms, the simpler rules of syntax, and the translation of easy English sentences into Attic Greek. White's First Greek Book represents the amount of preparation required.

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†But Roberts' edition of Nine Lives of Nepos will be accepted.

(*b*) Xenophon's Anabasis, Books I–IV, with questions on the syntax and subject-matter. Translation at sight of ordinary passages from Xenophon. Rolfe's edition of Xenophon's Anabasis, Book V, is a convenient text for practice in sight translation.

10. **Ancient History and Geography.**

(*a*) Greek history to the death of Alexander, with the connected geography.

(*b*) Roman history to A. D. 410, with the connected geography.

Smith's History of Greece, Myers' History of Greece, Liddell's History of Rome, will serve to indicate the amount required.

11. **Physics.**—The requirement represents at least a daily exercise during one school year, which falls within the last two years of preparation for college. It is expected that the ground covered will include fair representation of primary empirical laws from each of the main subdivisions of Physics.

The results called for demand vigorous and thorough instruction in the class-room, based upon laboratory exercises by the pupils. In addition to the test of written examination, it will be insisted upon that each candidate submit a laboratory note book, signed by his teacher, as evidence that the main principles of the subject as treated have been presented experimentally.

12. **Advanced Mathematics, Chemistry, Botany, Zoölogy.**

(*a*) *Advanced Mathematics.*—(1 unit.) Any two of the following: (1) *Solid Geometry.* The fundamental propositions of solid and spherical geometry, accompanied by a suitable amount of exercise in problems—the whole to represent the work of one half-year. (2) *Plane Trigonometry.* The development of the general formulæ of plane trigonometry, with applications to the solution of plane triangles and the measurement of heights and distances. (3) *Advanced Algebra*, *Part I.* Surds and complex quantities, ratio, proportion and variation, arithmetical, geometrical and harmonic progressions, examples of other simple series determinants and elements of the theory of equations, including the solution of numerical equations by Horner's Method. (4) *Advanced Algebra*, *Part II.* Inequalities, limits and indeterminate forms, exponentials and logarithms, natural logarithms, convergency and divergency of series, indeterminate coefficients with applications to integral functions, partial fractions, expansion of functions and summation of series, permutations and combinations, the binomial theorem for any index, exponential and logarithmic series, logarithmic computation.

(*b*) *Chemistry.*—(1 unit.) The preparation required will include a thorough acquaintance with the elementary principles of the science. Laboratory practice is essential.

(*c*) *Botany.*—(1 unit.) A knowledge of the morphology and simpler physiology of the higher plants is required. This should be based upon a full year of practical work in the laboratory and to some extent, also, in the field. Careful attention should be paid to the recording of observations, by notes and drawings, together with the drawing of correct inferences from the observations. It is desirable that the pupils become familiar with the easier orders of flowering plants represented in the local flora. Bergen's Elements of Botany (Pacific Coast Edition), Spaulding's Introduction to Botany, Setchell's Laboratory Practice for Beginners, and Jepson's Flora of Western Middle California, indicate both the scope and the method of the work.

(*d*) *Zoölogy.*—(1 unit.) To consist in the actual study of animals and recitations, the practical work to be the center of the preparation. The practical work should be partly in the laboratory and partly in the field. The chief aim of the examinations in the subject will be to determine how closely and accurately pupils have observed. Such guides for study as Boyer's Elementary Biology, Part 1; Colton's Practical Zoölogy; Needham's Elementary Lessons in Zoölogy; or Dodge's Introduction to Elementary Practical Biology.

13. **Mediaeval and Modern History.**—(1 unit.) Myers' Mediæval and Modern History will indicate the period to be covered and the amount required.

14. **English.**—(2 units.) The examination in this subject will presuppose thorough acquaintance with the works named below, as regards organization and development of thought, as regards style and metrical structure, and as regards their relation to the author and his age: (1) Burke's Speech before the Election at Bristol; Macauley's First Speech on the Reform Bill; Webster's Reply to Hayne; (2) Poems, lyrical, reflective, didactic and satirical: Milton's Comus, Lycidas and Sonnets II, XVI, XIX, XXII, Dryden's Alexander's Feast, Pope's Rape of the Lock, Gray's Elegy and the Bard, Keats' The Eve of St. Agnes and The Nightingale, Shelley's The Cloud and The Skylark, Wordsworth's Tintern Abbey, Laodamia, Ode on the Intimations of Immortality, and Ode to Duty, Lowell's The Vision of Sir Launfal, Browning's A Transcript from Euripides (in Balaustion's Adventure), Tennyson's The Passing of Arthur, Chaucer's Prologue to the Canterbury Tales; (3) Thackeray's The Newcomes.

While the regular examination will be confined to these subjects, schools on the accredited list of the University may, after consultation with the English Department, make such substitutions as the following: For (1), any three oratorical masterpieces of argument (including one of Burke's); for the Rape of the Lock—the Essay on Man, or Dryden's The Character of a Good Parson, Pope's Epistles to Jervas and Boyle, and Johnson's The Vanity of Human Wishes; for Chaucer's Prologue to the Canterbury Tales—selections from Clough and Arnold; for the Vision of Sir Launfal—Tennyson's Enid, or his Gareth and Lynette; for Comus—Paradise Lost, Book 1, or 2, or 5, or 6; for (3)—Silas Marner and the Vicar of Wakefield, or Henry Esmond.

15. **A Modern Language.**—Namely, either of the following, involving about two years' work:

(*a*) *French.*—The ability to read at sight simple French prose, and to translate correctly simple English into French; a knowledge of the principles of French grammar, as contained in any good work on the subject.

(*b*) *German.*—The ability to read at sight simple German prose, and to translate correctly simple English into German; a knowledge of the principles of German grammar, as contained in any good work on the subject. Ability to follow University class exercises in German, and to answer in German.

REQUIREMENTS FOR ADMISSION BEGINNING WITH THE ACADEMIC SESSION 1905-06.*

Beginning with the academic session of 1905-06 the Medical Faculty will demand at least two full years of college work from all applicants for admission.

This regulation renders it necessary for the applicant to present, as part of the high or secondary school preparation for the academic work, the highest entrance requirements in English, mathematics and chemistry, designated in the Register of the University of California as Subjects 14, 12A (1 and 2), and 12B, as well as the physics, Latin and history required for entrance under Subjects 11 and 1 to 7 inclusive. Further qualifications in modern languages are very desirable before the student enters upon the preliminary academic work required of all applicants for admission to the Medical Department.

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*The Faculty of the Medical Department of the University reserves the right to make these requirements active beginning with the academic session 1903-4 if it be judged the best policy for the Department.

Beginning with the academic year 1905-06 all students desiring to enter the first year of the medical course and all new students seeking advanced standing must present evidence of having completed at least two full years of preliminary training in the undergraduate department of a college or university of recognized standing. Satisfactory evidence must also be presented that during these two years the applicant has completed courses of the following values:

Chemistry.—(1) A course in general inorganic chemistry, including lectures, recitations and laboratory work. *Lectures and recitations two or three hours; laboratory work five or six hours a week throughout one year.* In this course should be included the main facts of physical chemistry.

(2) Quantitative analysis. Gravimetric and volumetric. *Laboratory nine hours a week, one half-year.*

(3) Organic Chemistry. A course of lectures, demonstrations and recitations in organic chemistry. *Two hours a week, one half-year.*

Courses 1, 2, 3, 4, 5A and 8 in the Department of Chemistry in the University of California cover the work outlined above, which constitutes the minimum required amount of chemistry.

Physics.—(1) A course in general physics, including lectures, recitations and laboratory work. *Seven hours per week throughout one year.*

(2) A laboratory course in physical measurements. *Six hours per week throughout one year.*

Courses 1 and 3 in the Department of Physics of the University of California cover the work outlined above, which constitutes the minimum required amount of physics.

Biology.—(1) A general course in zoölogy, giving a knowledge of the main facts of biology, covering structure, life-history and vital activities of selected types of animal life. The chief points of cytology and development, as well as a clear conception of the doctrine of descent, should also be given in this course. *Two hours a week throughout one year.*

(2) Laboratory work in zoölogy covering the points brought out in Course 1, with objectivity and the training of the powers of observation as its special features. Practice in the recording of scientific phenomena both by means of word description and drawings should also be given. *Six hours per week throughout one year.*

Courses 1A and 1B in the Department of Zoölogy in the University of California cover, in general, the minimum work required in biology.

English.—A course in English composition consisting of consultation and theme work. *At least three hours per week throughout one year.*

French and German.—Applicants must possess a reading knowledge of scientific French and German.

The standard in the required courses outlined above must correspond and be at least equal to those given in the academic department of this University.

It is suggested that students should also during their preliminary academic training take certain elective courses which would materially increase the efficiency of the preparation for their later work in medicine. Advanced mathematics, comparative anatomy, embryology, laboratory work in organic chemistry and advanced work in physics covering the theory of solutions are courses of this nature. Entering students, therefore, are urged to present them on admission with the required work. The adequate training of a physician certainly presupposes a knowledge of physics, chemistry, biology and the modern languages as outlined above; but the need of a broad foundation in general culture can not be over-estimated, and students should select from the curricula of their colleges as many courses as possible beyond those demanded and recommended by the Faculty of the Medical Department.

Although the preliminary collegiate work will not be required of all students until the session of 1905, those who enter the medical school before that time are urged for the sake of their future work in medicine to conform as nearly as possible to the preparation outlined above, and to present on admission as many of the courses in physics, chemistry and biology as circumstances permit.

ADVANCED STANDING.

Students of recognized medical colleges are admitted to the second, third and fourth years' classes only upon examinations covering the subjects in which they seek to be accredited. They must first present to the administrative officer evidence that they have satisfied the regular matriculation requirements, and obtain from the Dean authorization for examination.

JOINT COURSE IN NATURAL SCIENCE AND MEDICINE GRANTING IN SIX YEARS THE DEGREES OF B.S. AND M.D.

Beginning with the academic session of 1905,* when the new entrance requirements of the Medical Department go into effect, all students who satisfactorily complete the first two years of medicine will be admitted to the degree of B.S. in this University. This follows because the new requirements and the present premedical course are precisely similar, and all students would then enter the joint course now established by the combined action of the Medical Faculty and Academic Council on advanced standing. This plan goes into effect in the academic year 1902–03 and covers six years' residence in the University, two in the College of Natural Sciences of Berkeley and four in the Medical School in San Francisco. The members of the Medical Department teaching the scientific branches become *ipso facto* members of the Faculty of the College of Natural Sciences, and on satisfactory completion of the first two years of the medical course, this faculty recommends the student for the degree of B.S.

The requirements for entrance in this course are those of the College of Natural Sciences, except that in Subject 12, mathematics and chemistry must be offered. Prospective students who contemplate taking this course are advised to present, likewise, additional credits in modern languages and mathematics. The following as an outline of the course in the College of Natural Sciences at Berkeley covering a period of two years:

	Units.		Units.
English	4	Chemistry	15
French	6	Zoölogy	15
German	6	Military Sci. and Physical Culture	4
Mathematics	6		
Physics	12		

Total............68 units.

The details concerning the extent and scope of these courses can be found in the new entrance requirements for the Medical Department in which their content and aim are briefly described. Since the two years work in the College of Natural Sciences is largely spent in prescribed work, little time is allowed for other subjects in general culture; and as students are urged to elect such courses, this can best be done by extending their period of residence in the collegiate department to three years.

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*The Medical Faculty reserves the right to make these new requirements active at the beginning of the academic year 1903–04 if it be judged the best policy for the department.

Students intending to take the course should enter upon it at the beginning of the freshman year. They should also seek the advice of the Chairman or some other member of the Joint Committee of the Academic and Medical Faculties before making out their schedule of studies for the first term of the freshman year.

After the completion of their work in the Academic Department in Berkeley, students enter the Medical School to complete the studies leading up to the Bachelor's degree. This consists of

	Units.
Anatomy	38
Physiology	19
Pathology	19
Total	76

The work of these courses is described in detail in another part of this announcement.

After receiving the bachelor's degree, students enter upon the two years' study of the clinical branches of medicine, and upon satisfactory completion of these are granted the degree of M.D.

Special note should be taken by all students looking to the study of medicine in this University, that the preliminary course here described is in its essentials the only preparation that will admit to the clinical branches of medicine. Those, therefore, who are enrolled in the Colleges of Letters or Social Sciences, or in any of the technical colleges, and desire to study medicine, will need to supplement the usual courses in these colleges by such essentials of the course here outlined (French, German, Physics, Chemistry and Biology) as may not have been included in their original schedules.

HOSPITAL APPOINTMENTS.

The position of Interne, or House Physician and Surgeon, in the City and County Hospital, is open each year to five members of the graduating class who recommend themselves to the Faculty by their diligence and general fitness for the appointments. Internes receive their board and lodging for one year and secure opportunities for accumulating an invaluable experience in various fields of medicine and surgery. Interneships in many of the private hospitals in San Francisco are filled annually either upon the recommendation of the Medical Department or competitive examination.

BOARDING.

The expense of living in San Francisco is not great. Good board with room rent may be procured at the rate of five dollars per week at a convenient distance from the college building.

CLINICAL FACILITIES IN SAN FRANCISCO.

The clinical work of the Medical Department is given in the Out-Patient Dispensary, which is situated on New Montgomery Street in a densely populated district of the city and has a large clientele of patients of the poorer class. The dispensary is open from 9 a. m. until 6 p. m. each day and students of the third and fourth years have practical instruction upon the various ambulatory cases that present themselves for treatment. The ward work and clinics are held in the wards of the City and County Hospital where an abundance of material of all sorts is obtained for the work in medicine, surgery and gynecology. Through the liberal policy of the Board of Supervisors and the Board of Health the medical schools in San Francisco are given practical control of the clinical material in the hospital, so that as far as purposes of instruction are concerned some of these wards are equivalent to a private hospital controlled by the department. In the near future, however, it is to be hoped that some liberal minded citizen will make a donation for a University Hospital which will be completely under the control of the institution and where even more extensive opportunities for bedside instruction can be given to the students during their clinical years.

Owing to the recent acquisition of the Hawaiian and Philippine Islands and the consequent establishment of a large garrison on the government reservation in San Francisco, abundant opportunity for the study of the different phases of many tropical diseases is afforded. Through the courtesy of the government officials at the Presidio it is hoped that a certain amount of this material and many specimens will be available for the instruction of students.

Thus far none of the numerous private hospitals has been available for medical instruction, but it is hoped that their directors may soon throw open their wards for the use of the students.

The Board of Supervisors contemplates the erection of a new City and County Hospital on the pavilion system which will be modern in every respect and will provide improved laboratory and clinical facilities for medical students.

FEES.

Matriculation Fee (paid but once) - - -	$ 5.00
Tuition Fee (for each year of attendance) -	150.00
Graduation Fee (paid but once, but not returnable)	25.00

A key and breakage deposit is required each year for the use of lockers and to cover cost of material used in the laboratories, and damage to college building and equipment. At the close of the session the unexpended balance is returned to the students. The deposit is:

For the first-year class,	$15.00
For the second-year class,	15.00
For the third-year class,	10.00
For the fourth-year class,	10.00

A rental of $5.00 per year is charged for the use of a microscope, and $2.00 for an immersion lens. In the first and second years each student must provide himself with a microscope, while in the third year two students are permitted to use the same instrument. In case the department is unable to supply the students with them, arrangements will be made with a firm in San Francisco to rent microscopes at the college rate. Students are urgently advised to purchase instruments for their own use.

LIBRARY.

The library and reading room of the Medical Department is on the first floor of the main building and contains about 2,300 volumes. The catalogue shows that there are on the shelves many of the current text-books and some of the better monographs. Along certain lines the library is particularly strong and it will be the policy of the department by frequent purchases to make the collections uniform and to obtain as soon as possible complete files of the more important periodicals published in English, French and German. Among the journals in the library are the following, with the exception of occasional missing volumes, the sets of which are complete:

American Journal of Medical Sciences, American Journal of Obstetrics, American Medicine, Anatomischer Anzeiger Anatomische Hefte, Annals of Surgery, Archiv für Anatomie und Entwickelungseschichte, Archiv für Entwickelungsmechanik der Organismen, Archiv für Klinische Chirurgie, Archiv für Pathologische Anatomie und Physiologie, Archives of Surgery, Arbeiten aus dem Kaiserlichen Gesundheitsamte, Berliner Klinische Wochenschrift, Boston Medical and Surgical Journal, British Medical Journal, Centralblatt für Bakteriologie und Parasitenkunde, Centralblatt für Chirurgie, Centralblatt für Gynecologie, Centralblatt für Klinische Medicin, Congres Francais de Chirurgie, Deutsche Medicinische Wochenschrift, Ergebnisse der Anatomie und Entwickelungsgeschichte, Fortschritte der Medicin, Jahrbücher der Gesammten Medicin, Jahresbericht der Gesammten Medicin, Jahresbericht über die Fortschritte der Anatomie und Entwicklungsgeschichte, Jahresbericht über die Fortschritte der Anatomie und Physiologie, Jahresbericht über Pathogenen Mikroorganismen, Journal of the American Medical Association, Journal of Comparative Neurology, Journal of Experimental Medicine, Journal of Hygiene, Journal of Medical Research, London Lancet, Medical Record, Medical Review of Reviews, Morphologische Arbeiten, New York Medical Journal, Philadelphia Medical Journal, Revue de Chirurgie, Transactions of American Surgical Association, Verhandlungen der Deutschen Gesellschaft für Chirurgie, Wiener Medizinische Wochenschrift, Zeitschrift für Chirurgie, Zeitschrift für Morphologie und Anthropologie.

ORGANIZATION OF INSTRUCTION.

Session of 1902=03.

SUMMARY OF COURSES.

In conformity with the practice of the University, instruction is divided into three classes, didactic, demonstrative and practical. Under the head of didactic instruction are comprised lectures, recitations and conferences. Under the head of demonstrative instruction are included demonstrations and clinics. Under the head of practical instruction are grouped all varieties of work which the students do for themselves—laboratory sessions, bedside study and sectional dispensary work.

Eighteen hours of didactic teaching constitute one unit, while thirty-six hours of demonstrations and clinics have the same value. This is likewise the valuation for such practical courses as include the entire instruction in the subject. Fifty-four hours of practical work which is associated with a didactic course constitute one unit. The unit-valuation of practical work thus depends upon whether it represents a part or constitutes the whole of the instruction, since the scope of work will obviously be different. For example, the laboratory work in physiology accompanies a didactic course upon physiology, and the ward classes in surgery accompany didactic and clinical courses in surgery. Of such practical work fifty-four hours constitute a unit. On the other hand, the laboratory course in bacteriology comprises all the work in bacteriology and possesses the corresponding scope, and of this work thirty-six hours constitute one unit.

Thirty-two to thirty-six units represents the work of the average year. Exceptional students can carry two to four units more, and are urged to elect them. So far as has been possible the work has been concentrated. The advantages of concentration are many. The system offers more work to the student, and is conducive to favorable conditions of study in that students in the prolonged and consecutive periods apply themselves better and enter more deeply into the subject. It also grants to the student much more free time, time of the greatest value for purposes of private study or advanced work.

It is believed that the students on account of this free time will take advantage of the elective courses offered by the departments of anatomy and pathology. In the extension and development of the courses in medicine it is planned to introduce the elective system into the clinical as well as the preclinical years and to allow the student throughout his course the right to elect a large percentage of his work. Instruction extends through thirty-six weeks.

In the tabulation are represented the hours and units of work which each student receives.

YEAR AND SUBJECT.	Didactic.		Demonstration Clinic.		Practical.	
First Year.	Hours	Units	Hours	Units	Hours	Units
Histology, Microscopic Organology, Neurology	108	6			216	4
Systematic Anatomy, Osteology, Dissections, Embryology	36	2			612	17
General Physiology	108	6				
Chemical Physiology					180	3⅓
Second Year.						
Systematic Anatomy	36	2			252	7
General Physiology	72	4			144	2⅔
Morphological Pathology					288	8
Chemical Pathology					180	5
Bacteriology					216	6
Physiological Action of Drugs	54	3				
Total		23				53
Third Year.						
Materia Medica§					36	1
Therapeutics	72	4				
Medicine	72	4	144	4	234†	4⅓
Surgery	72	4	108	3	108* 126†	4⅓
Obstetrics	108	6				
Laboratory Diagnosis					108	3
Fourth Year.						
Medicine	72	4	162	4½	90	1⅔
Surgery	72	4	108	3	36* 90†	2⅓
Operative Obstetrics			36	1		
Gynaecology	36	2	72	2	18	⅓
Autopsies			36	1		
Total		28		18½		20
Electives, 3 required.						
Pediatrics	36	2			72	1⅓
Diseases of the Skin					72	1⅓
Clinical Neurology	36	2	36	1	36	⅔
Opthalmology	36	2			72	1⅓
Otology, Rhinology, Laryngology			36	1	36	⅔
Orthopoedics					108	2
Genito—Urinary Diseases			36	1	108	2
Total		6		3		9⅓

§Not given during 1901-2.
*Laboratory work.
†Work with patients.

CLASS STANDING AND EXAMINATIONS.

For the determination of class-standing for advancement and graduation the results and markings of all studies and examinations consist of "Passed With Honor," "Passed," and "Not Passed." The value of the markings "Passed with Honor" is expressed in honor units, which correspond to the unit value of the particular course; the sum total of the honor units determines the class standing of honor students, and upon such class standing are based the recommendations for Internships.

Under the term "Examination" is understood the judgment of the instructor upon the work of a student. This judgment may be reached in three ways; by personal contact with the students and observation of their routine work, by oral examinations, and by written examinations. The grading of students upon the basis of a written examination alone is not practiced.

At the close of each academic year the following examinations are held:

First year: Microscopic anatomy and chemical physiology.

Second year: Systematic human anatomy (including embryology), physiology, morphological pathology, chemical pathology and bacteriology.

Third year: Therapeutics, materia medica, obstetrics, internal medicine and general surgery.

Fourth year: Internal medicine, clinical medicine, general surgery, clinical surgery, gynecology, operative obstetrics and three of the elective branches, one of which must be neurology, pediatrics, or dermatology.

Students who fail to pass the examinations in three or more subjects must repeat the year, the branches in which they were conditioned constituting their curriculum. Those students who fail in two courses must pass one of them before the opening of the academic year following that in which they were incurred, so that more than one condition can not be carried into the second, third or fourth year and this must be passed in order to render the student eligible for the examinations held at the end of that session. Under all circumstances, however, prerequisites must be respected. Inasmuch as there will be no opportunity during the clinical years to make up practical courses, no student will be premitted to carry into the third year a condition in a course which includes laboratory work. Fourth year students who fail in one or two branches may reappear for examination after three months. In the event of their passing the examinations at that time they will be recommended to the Board of Regents for the degree; should they then fail in one branch even, they must repeat their fourth year. The Faculty reserves the right to sever at any time the connection of any student with the Medical Department for what it deems either mental or moral unfitness for a career in medicine.

REQUIREMENTS FOR GRADUATION.

1. The candidate for the degree of Doctor of Medicine must have attained the age of twenty-one years. He must give satisfactory evidence of possessing a good moral character, which includes unexceptional conduct while in the department.

2. He must have studied medicine four full years, and must have attended four regular courses in separate calendar years, the last of which must have been in the University of California.

3. He must have done the required work and passed the stated examinations.

4. He must have paid in full the college fees, including the graduation fee.

SCHEDULE OF COURSES.

FIRST YEAR.

HOURS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8.30-11.30	Microscopic Anatomy Didactic & Pract'l 36 weeks		Microscopic Anatomy Didactic & Pract'l 36 weeks		Microscopic Anatomy Didactic & Pract'l 36 weeks	
11.30-12.30	Physiology Didactic 36 weeks		Physiology Didactic 36 weeks		Physiology Didactic 36 weeks	
1.30-5.30	Osteology, Practical Daily. 6 weeks August 18—October 4 Systematic Anatomy, Practical Daily. 21 weeks October 6—March 7 Chemical Physiology, Practical Daily. 9 weeks March 9—May 8					

SECOND YEAR.

Hours			
8.30-12.30	Physiology Practical 9 weeks Monday, Tuesday, Thursday, Saturday Aug. 18-Oct. 18	Morphological Pathology, Practical 18 weeks Monday, Tuesday, Thursday, Saturday Oct. 20-March 7	Bacteriology Practical 9 weeks Daily March 9-May 9
1.30-4.30	Physiology Practical Wednesday, Friday Aug. 18-Oct. 4	Systematic Anatomy, Practical 18 weeks. Daily Oct. 6-Feb. 14	Chemical Pathology 9 weeks. 5 days March 9 May 19
4.30 **5.30**	Physiology Didactic, 24 weeks, Monday, Wednesday, Friday Aug. 18-Feb. 14 Pharmacology, Didactic, 27 weeks, Tuesday, Thursday Aug. 18-March 7		

THIRD YEAR.—Forenoon.

HOURS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8	Medicine Didactic				Medicine Didactic	
9	Surgery Didactic	Medicine Clinic		Medicine Clinic	Surgery Didactic	Medicine Clinic
10	Obstetrics Didactic	Surgery Practical ½ year Medicine Practical ½ year		Medicine Practical ½ year Surgery Practical ½ year	Therapeutics Didactic	Medicine Practical ½ year Surgery Practical ½ year
11	Therapeutics Didactic	Surgery Clinic	Obstetrics Didactic	Surgery Clinic	Obstetrics Didactic	Surgery Clinic

THIRD YEAR.—Afternoon.

HOURS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	Surgical Pathology, 9 weeks					
2	Laboratory Diagnosis, 9 weeks.					
3.30	Medicine Dispensary ½ year	Surgery Dispensary ½ year	Medicine Dispensary	Surgery Dispensary ½ year	Medicine Dispensary	
4.30	Medicine Dispensary ½ year	Surgery Dispensary ½ year	Medicine Dispensary	Surgery Dispensary ½ year	Medicine Clinic	

FOURTH YEAR.—Forenoon.

HOURS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8	Medicine Didactic	Ophthalmology Clinic	Pediatrics Clinic Orthopedics Practical	Obstetrics Clinic	Medicine Didactic	Genito-Urinary Clinic
9	Surgery Didactic	Medicine Clinic	Pediatrics Practical Orthopedics Practical	Medicine Clinic	Surgery Didactic	Medicine Clinic
10	Operative Surgery 1 Section each ½ year	Gynaecology Clinic	Pediatrics Practical Orthopedics Practical	Otology Laryngology Rhinology Clinic	Clinical Neurology Didactic	Gynaecology Clinic
11	Gynaecology Practical	Surgery Clinic	Surgery, Practical 9 weeks Medicine Practical 9 weeks Gynaecology Practical 18 weeks	Surgery Clinic	Gynaecology Didactic	Surgery Clinic

FOURTH YEAR.—Afternoon.

HOURS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
3.30	Medicine Practical ½ year Clinical Neurology Dispensary ½ year	Medicine Practical ½ year Clinical Neurology Dispensary ½ year	Diseases of the Skin Eye Dispensary	Surgery Practical ½ year Ear, Eye Dispensary ½ year	Surgery Practical ½ year Ear, Eye Dispensary ½ year	
4.30	Autopsies ½ year Medicine Dispensary 9 weeks Surgery Dispensary 9 weeks	Autopsies ½ year Medicine Dispensary 9 weeks Surgery Dispensary 9 weeks	Diseases of the Skin Eye Dispensary	Autopsies ½ year Medicine Dispensary 9 weeks Surgery Dispensary 9 weeks	Autopsies ½ year Medicine Dispensary 9 weeks Surgery Dispensary 9 weeks	
5.30	Medicine Clinic ½ year	Genito-Urinary Dispensary	Medicine Clinic ½ year	Genito-Urinary Dispensary	Genito-Urinary Dispensary	

COURSES OF INSTRUCTION.

ANATOMY.

Joseph Marshall Flint, M.D., Professor of Anatomy.
Irving Hardesty, Ph.D., Instructor in Anatomy.
Robert Orton Moody, M.D., Assistant in Anatomy.
Stephen Cleary, M.D., Assistant in Anatomy.
A. W. Lee, M.D., Voluntary Assistant.
Edward Miller, Technical Assistant.

The courses of instruction in anatomy are given in the Hearst Anatomical Laboratory, which occupies rooms on several floors in the main medical building. The laboratories of the department have been entirely rebuilt and newly equipped. On the top floor are eight small dissecting rooms with capacity from one to three tables each. The rooms are lighted from the ceilings, well ventilated, and fitted with special reference to the effect of a clean and pleasant environment upon the work of the students. The classes are divided into small groups in order to avoid the inevitable noise and disturbance which results from a large group of students working together. Material for dissection is prepared in the embalming room, which is equipped with the necessary hydraulic apparatus to inject both the embalming fluids and the color masses for the arteries and veins at any desired pressure. After this process is completed the bodies are preserved in wood alcohol vapor.

The teaching museum, consisting of specially prepared corrosions, injections, dissections and models, is located in a large hall near the dissecting rooms. Here Steger's plaster models, the embryological series of Ziegler and the Tramond models of the organs of special sense are kept for the purpose of aiding the students in their work.

The laboratory for microscopic anatomy is very large and has abundant north light. It is outfitted with microtomes and all the stains and reagents necessary for the ordinary and finer methods of microscopic preparation. The Zeiss stereoscopic microscope, microspectroscope, polariscope, etc., are found in the students laboratory for the purpose of illustrating the special features of his work. Each student is provided with a locker and has in his outfit glassware and special reagents, a Leitz dissecting microscope, a Leitz microscope with stand I, four oculars and four objectives, including a 1–12 immersion. The laboratory is provided with a large paraffin oven divided into compartments for the use of the students. In conjunction with the department of pathology the anatomical laboratory has outfitted a combined projection and dark room with all the appliances necessary for microscopic and ordinary photography. Its equipment consists of a Zeiss projection apparatus, Zeiss camera with complete series of lenses, large portrait camera with Zeiss planar attachment and a special copying camera with a five-foot draw. The Edinger projection apparatus with photographic attachment is also used in this work.

Special attention has been paid in the equipping of the laboratories with the facilities for research and original investigation. Complete outfits of reagents, glassware, microscopes, apparatus for wax reconstructions, have been installed. A whole brain Jung microtome in possession of the department of pathology is available for work in neurology. Five private rooms have been outfitted for the staff and advanced students. A large preparation room is in charge of the technical assistant where all of the apparatus and reagents necessary for microscopic work are kept constantly on hand. This is also meant to accomodate students who are at work on special problems. Animals for experimental purposes are kept in a separate building which contains a well equipped operating room. This is used by the departments of surgery, pathology and anatomy in common.

The routine work of the department falls into the natural divisions of gross and microscopic anatomy, and some effort is made to have the transition between the two as gradual as possible. Inasmuch as the process of formal education must end sooner or later, the department endeavors as far as possible to make the students entirely independent. This is further encouraged in the elective system by which a certain amount of selection is allowed in the regular work of the department.

Microscopic Anatomy.

The various tissues and organs of the body are studied from the developmental point of view so that their gradual differentiation from the embryonic to the adult form is taken up. Since function and structure can not be separated in the consideration of the microscopic appearance of tissues and organs, their chief physiological aspects are briefly considered. The study of each group consists of three main steps: 1. For the purpose of orientation, the consideration of their macroscopic appearances, relations and physiology. 2. The transition from the macroscopic to the microscopic conditions is made with the dissecting microscope and teasing methods, free hand or frozen sections. 3. The more detailed study is made from specimens prepared by methods designed to emphasize their principal microscopic features. In this course the value of comparing the organs of a series of animals is recognized and the student has a typical set of comparative specimens. Routine sections are, as a rule, prepared by the technical assistant and are only mounted by the student. In order to familiarize him with the details of histological technique, each member of the class must present during the year acceptable preparations of different organs made by various methods. This includes the processes of fixation, embedding in both paraffin and celloidin, and staining by the common methods. On the completion of a group of closely related subjects, the student is required to incorporate the results of his laboratory work in a paper fully covering the ground. The paper must be illustrated with laboratory drawings and contain an epitome of the student's notes and collateral reading.

1. **Histology.**—DR. HARDESTY.

In this course the anatomy of the cell, its variations in form, the conditions and processes of its proliferation and the modifications which result in its differentiation into a cell of specialized type is considered. The formation of the embryonic germ layers is then taken up and followed by a detailed study of the different fundamental tissues of the body as they are composed of cells and cell products and derived from one or the other of the germ layers. The study is always comparative. *First year*, 3 *laboratory periods*, 3 *lectures per week*, 12 *weeks*. 3⅓ *units*.

2. **Microscopic Organology.**—DR. HARDESTY.

The organs are discussed with reference to the form, arrangement, and number of the fundamental tissues composing them with special reference to the structural and functional relations to other organs. In each case the student begins first with the tissue in situ and special effort is made to bridge the gap between the appearance of the organs in gross and under the microscope.

First year, 3 *laboratory periods*, 3 *lectures per week*, 12 *weeks*. 3⅓ *units*.

3. **Neurology.**—DR. HARDESTY.

In this course special attention is paid to the macroscopic and microscopic architecture of the central nervous system and the organs of special sense. The neurone studied in Course 1 is used as the unit in the construction of the nervous system with the view to tracing the origin, development and final arrangement of the different pathways for nerve impulses. Considerable attention is given to the consideration of the growth and development of the nervous system. 3 *lectures*, 3 *laboratory periods per week*, 12 *weeks*. 3⅓ *units*.

SYSTEMATIC HUMAN ANATOMY.

The courses in systematic anatomy are given by practical work entirely. There are no lectures or quizzes. Students are urged to work independently as far as possible. Special emphasis is laid upon the importance of visual images rather than word pictures of the various structures of the body. The student dissects from the standpoint of the segment and to a great extent looks upon the various structures as they are found in the body from the point of view of their comparative relationship and development. Topographical relations are shown by models and frozen or formalin sections. In order to emphasize the importance of original work, a series of statistical investigations are being constantly carried on by the students through the agency of tabulation charts on which they record the important variations found in their dissections. Special attention is paid to the variations of one particular part of the body.

4. **Osteology.**—PROF. FLINT, DR. MOODY AND DR. CLEARY.

Each student is loaned a skeleton and is required to model in clay and draw each bone in the body. *First year*, 6 *half days per week*, 6 *weeks*. 3 *units*.

5. **Head and Neck.**—PROF. FLINT, DR. MOODY AND DR. CLEARY.

First year, 6 *half days per week*, 7 *weeks*. 4⅔ *units*.

6. **Arm and Thorax.**—PROF. FLINT, DR. MOODY AND DR. CLEARY.

First year, 6 *half days per week*, 7 *weeks*. 4⅔ *units*.

7. **Leg and Abdominal Viscera.**—PROF. FLINT, DR. MOODY AND DR. CLEARY.

First year, 6 *half days per week*, 7 *weeks*. 4⅔ *units*.

In his second year the student must repeat at least two of courses 5, 6, and 7, provided they have already dissected the entire body in their first year. Research will be accepted in lieu of these courses.

8. **Organogenesis.**—PROF. FLINT.

The development of the various organs from their first appearance in the germinal layers to the conditions found in the adult body is briefly considered together with the mechanics of the development of organs, the process of growth and regeneration. *First and second years,* 1 *lecture and demonstration per week.* 2 *units.*

9. **Special Anatomy for Physicians and Advanced Students.**—PROF. FLINT AND DR. MOODY.

This course consists of special dissections designed primarily for physicians and others who wish to become familiar with the anatomy of particular regions of the body, such as the eye, ear, thorax, pelvis and abdominal viscera. The work is largely independent. A limited number of regular students will be permitted to take this course as an elective after finishing the required work of the department. *Hours arranged to suit applicants.* 4-8 *units.*

10. **Research.**—PROF. FLINT AND DR. HARDESTY.

Students and others who are sufficiently prepared will be allowed to undertake research upon original problems under the direction of the head of the department. A certain number of units in Course 10 will be accepted in lieu of the required systematic anatomy of the second year from students who have shown marked ability in their work.

PHYSIOLOGY.

The courses in physiology are given during the first and second years. The instruction consists in lectures and recitations on general and special physiology, laboratory work in chemical physiology, and in nervous and physical physiology.

1. **Lectures and Recitations in General Physiology.**

These lectures are given to the students of the first and second year classes. They present the general aspects of physiology as a biological science, the physico-chemical foundations of function, and the relations of function to structure. The lectures are supplemented by demonstrations and illustrations. 3 *hours per week throughout the first year.* 6 *units.* 3 *hours per week throughout* 27 *weeks of the second year.* 4⅔ *units.*

2. **Chemical Physiology.**

The laboratories in chemical physiology are well equipped, the students have individual desks, and are supplied with individual sets of reagents and apparatus. There are hoods for digestions, distillations and dessications. The balance room contains eight balances of the latest designs of Sartorius and Staudinger, a spectroscope, polariscope, refractometer, a large gas-pump and a dozen microscopes. It is the aim of the course to elucidate the chemical aspects of physiology to the end of general physiological knowledge, rather than of specialized chemical training. The student is sufficiently trained in technique to enable him to carry through the various procedures in analysis, but the point of view is that of physiology. All work is practical and individual. The course is given during the last period of the first year

As announced in the new requirements for admission to the Medical Department, it is the intention to relegate to the premedical collegiate years all instruction in pure chemistry. Until these requirements shall have become operative, the course in chemical physiology is preceded by a brief course in organic chemistry for the benefit of those students who have not received adequate instruction therein.

The course consists of:

(*a*) A study of the carbohydrates. The starches, primary and secondary sugars are systematically taken up, and their relations to digestion and nutrition expounded.

(*b*) A study of the fatty acids, fats and adipose tissues. The physical and chemical relations of the fats are defined, and their relations to digestion, nutrition and metabolism elucidated.

(*c*) A study of the proteins, their derivitives, antecedents and constituent groups. The particular proteins are exhaustively studied, and particular stress is laid upon the formation of proteins in the synthetic work of the animal and vegetable body, their reduction in the course of digestive and bacteriological enzymic action, and their re-organization in the process of nutrition. The proteins in the body—of the muscle, fibrous tissue, cartilage, tendons, reticulum, thyroid body and the glands—are studied seriatim.

Following this the individual systems and tissues of the body are studied. These include: The blood and the lymphatic system, the bones, the glands of the body, the skin, the hair, the liver, the bile, the nervous system, the organs of digestion and the processes of digestion, absorption and assimilation, and the feces. The most important of these are studied by the entire class, the others in sections. Particular attention is paid to the urine which is studied from the physiological point of view in the most exhaustive manner, and especially in the attempt to secure for the students a clear conception of the katabolic processes of metabolism. All of the organic and inorganic constituents of normal urine are analysed.

It is the aim of the department that this course shall supplement and form the counterpart to the course in general physiology. Regular conferences are held in connection with the course. Students showing proficiency are encouraged to elect further work in chemical physiology and so soon as they are independent will be placed on research upon some topic connected with the subject.

Following the course in chemical physiology a brief course in toxicology is given. In this course the students are taught the identification and micro-chemical study of some of the organic and inorganic poisons. This course includes instruction in the recognized methods of toxicological research and is entirely practical in nature. 5 *days per week*, 9 *weeks*. 3⅓ *units*.

3. Laboratory Course in General Physiology.

This course is given at the beginning of the second year. The laboratory is well equipped with new instruments of latest design including Ludwig's continuous tracing kymograph, 12 spring kymographs and accessories, Bowditch interrupting clock, electro magnetic chronographs, electrically maintained tetanus springs and turning forks, 12 DuBois Raymond induction coils, DuBois Raymond keys, moist chambers, muscle levers, spring and pendulum myographs, mechanical tetanometer, galvanometer, arterial schemes, mercurial, spring and membrane manometers, oncometers, sphygmographs, cardiographs, stethographs, Marcy's tambours, spirometer, reaction time chronograph, eye and ear models, phakoscope, Kuhne's artificial eye. Here the students perform experiments and measurements in the physiology of nerve and muscle, circulation and respiration, vision, audition and locomotion. The fundamental facts of physiological psychology are also demonstrated. 4 *days per week*, 9 *weeks*. 2⅔ *units*.

PATHOLOGY.

ALONZO ENGLEBERT TAYLOR, M.D., Professor of Pathology.
H. A. L. RYFKOGEL, M.D., Instructor in Pathology.

Instruction in pathology is given in the Hearst Laboratory of Pathology during the second year, and at the City and County Hospital during the fourth year. The courses consist entirely of laboratory work; formal didactic teaching is not employed. The instruction consists of individual work upon the part of the student, supplemented by such demonstrations and discussions as are considered necessary to fix and amplify the knowledge gained in first-hand study. The inductions, the theoretical and practical relations and the numerous general considerations in pathology are brought into the course in the form of short discussions, introduced in moments which are opportune by virtue of the particular practical work in hand. It is believed that this correlation of general pathology to concrete laboratory work is more effective than a didactic course, and more rapidly develops the scientific independence of the student. Since adequate equipment is a *conditio sine qua non* of rapid and sustained work, the students' laboratories have been elaborately equipped with the best instruments and apparatus of latest design. It is the principle of instruction in this department to bring the student into a contemplation of pathology from the biological point of view, since only from this standpoint can the scope and dignity of the science and its relations to hygiene and preventative medicine be adequately understood and valued. Properly studied, pathology forms the substratum of clinical medicine, and many of the manipulations employed in pathological studies are indispensable to the practice of medicine. A knowledge of pathology not only endows the student with conceptions of the nature of disease, but also trains in the diagnosis of disease.

1. **Morphological Pathology.**—PROF. TAYLOR AND ———

The laboratory is equipped with new microscopes—the latest model of Leitz, stand I, rack and pinion centering stage, revolver with four objectives, objectives 1, 3, 5, and 1-12 oil immersion and oculars 0, I, III and IV—Greenough binocular and Nebelthau microscopes for the study of inflammation and of large sections; ten microtomes; and a large paraffin oven with reservoirs for paraffin; microspectroscopes, micropolariscopes and other special apparatus. Each student receives a microscope, apparatus for embedding and mounting, bottles for tissues and stains, one dozen dropping bottles, and staining dishes. The gross lesions are demonstrated in the fresh state and upon Kaiserling preparations from the museum. The students fix, harden, embed, cut and stain their sections until the particular varieties of technique employed in pathological work are firmly acquired. For the remainder of the material, blocks are given out for sectioning or cut sections distributed.

The course includes instruction upon the chief organs and tissues in the order of their importance. It is realized that the entire subject can not be covered, and in lieu of such an attempt the principal lesions of the more important organs and tissues are studied in an exhaustive manner. Throughout the course emphasis is placed upon the importance of acquiring accurate visual images of the lesions.

In the study of the lesions of disease the students are taught to found their observations upon an ultimate analysis of tissue units upon the basis of cytology and microscopic anatomy. From the results of these ultimate analysis the student will build up the groupings which constitute pathological lesions, thus avoiding all confusion of theoretical classifications and didactic schemata. In the study of etiology, the experiment is employed whenever feasible and advantageous. Inflammation, in its various phases, is studied largely from the experimental point of view. Systematic reports and original drawings are regular portions of the work. 16 *hours per week*, 18 *weeks*. 8 *units*.

Prerequisite: Completion of the course in first year histology and microscopic anatomy.

2. **Chemical Pathology.**—PROF. TAYLOR AND ———

The laboratory is well equipped. Students have individual desks stocked with all needed apparatus and reagents. Disposed about the room are hoods containing large water baths, blast, gas generators, the stand for Kjeldahl digestions, and large desks for distillations, etc. Adjacent to the main laboratory is the balance room, containing ten Sartorious balances, individual exsiccators, a large drying oven, microscopes, spectroscopes, polariscopes and a refractometer.

In this course disease is studied from the point of view of disturbed functionation; this and the previously detailed course contrast pathological physiology with pathological anatomy. Chemical biology is daily becoming of greater importance, and upon its study depends the comprehension of the nature of many diseases and their progressions, this being particularly true of the microörganisial infections. The course includes the chemical study of the organs and tissues of the body in various diseases, of bacterial processes, of exudates and transudates, and of the gastric contents, the feces, and the urine. 4 *hours per day*, 5 *days per week*, 9 *weeks*. 5 *units*.

Prerequisite: Completion of the first year course in chemical physiology.

3. **Bacteriology.**—DR. RYFKOGEL.

The students use, for the microscopical work, the equipment of the laboratory of morphological pathology, which adjoins the laboratory of bacteriology. The bacteriological laboratory proper is fully equipped for the preparation of culture media, and the cultivation and study of microörganisms, each student being supplied with an individual outfit of apparatus. The first portion of the course consists in the study of microbiology. Microörganisms of many types and kinds, both saphrophytic and pathogenic, are exhaustively studied. Following this the students are instructed in the narrower domain of bacteriological pathology. The infections are studied in original lesions and by experiment, and the relations of microörganisms to general and special pathological conditions are thus elucidated. 4 *hours per day*, 6 *days per week*, 9 *weeks*. 6 *units*.

Prerequisite: Completion of the first year course in histology and microscopic anatomy.

4. **Autopsy Course.**—PROF. TAYLOR.

During the fourth year an autopsy course is conducted in the City and County Hospital. The members of the fourth year class witness and participate in the autopsies held upon the subjects, which during life were the objects of the clinical studies of the same students. *Two sections of* 1 *semester each*, 4 *hours per week, except in the event of absence of material*. 1 *unit*.

Research Department of Hearst Pathological Laboratory.

The private laboratories of pathology are installed with elaborate equipments for original work along morphological and chemical lines. These laboratories are open to physicians and students desirous of doing research in pathology. Students are urged to undertake original work during their undergraduate years. The sole prerequisite to admission is adequate training. The laboratories are under the direction of the Professor of Pathology.

THERAPEUTICS.

WASHINGTON DODGE, M.D., Professor of Therapeutics.

RICHARD M. H. BERNDT, M.D., Instructor in Therapeutics.

CHAS. LEWIS MORGAN, M.D., Lecturer in Materia Medica and Pharmacy.

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1. **Physiological Action of Drugs.**—DR. BERNDT.

The action and application of the chief remedial agents are considered. Lectures, demonstrations and recitations. *Second year*, 2 *hours per week*, 27 *weeks.* 3 *units.*

2. **General Therapeutics.**—PROF. DODGE.

The therapeutic indications in the various diseases are expounded, and the relations to the etiology of disease fully elucidated. Prominence is given to the hygienic and other non-medicinal aspects of therapeutics. Lectures. *Third year*, 2 *hours per week throughout the year.* 4 *units.*

3. **Materia Medica and Pharmacy.**—DR. MORGAN.

The course in materia medica and pharmacy having been transferred from the first to the third year, no instruction in those subjects will be given during the session of 1902-3, since the present junior class was instructed in those subjects during their first year. When the course is resumed it will be purely practical, embracing the compounding of prescriptions, instruction in incompatabilities, and the general regulations for the safe and efficient employment of remedial measures.

MEDICINE.

WILLIAM WATT KERR, M.D., Professor of Clinical Medicine.

HERBERT C. MOFFITT, M.D., Professor of the Theory and Practice of Medicine.

CLARENCE QUINAN, M.D., Instructor in Medicine.

GEORGE E. EBRIGHT, M.D., Instructor in Medicine.

OSCAR NETTLETON TAYLOR, M.D., Assistant in Medicine.

GEORGE F. REINHARDT, M.D., Assistant in Medicine.

FRED. C. BURROWS, M.D., Assistant in Medicine.

CHARLES M. COOPER, M.D., Assistant in Medicine.

J. WILSON SHIELS, M.D., Assistant in Medicine.

GEORGE J. McCHESNEY, M.D., Assistant in Medicine.

CHESTER W. WOOLSEY, M.D., Assistant in Medicine.

Instruction in medicine is founded upon practical work based upon the available clinical material. Direct contact with disease in its varied manifestations can alone train the student in the accurate observation of sickness, in the judicious application of the methods of diagnosis, and in the rational employment of therapeusis. The material in internal medicine at the disposal of the staff of instructors and students is large in quantity and rich in quality. General medical work constitutes the greater bulk of the work of physicians, and therefore properly requires it a large portion of the time of the student. The general plan of the department is to ground the students in the fundaments of medicine during the third year, and during the fourth year to place the students upon individual practical work.

1. (*a*) **Physical Diagnosis.**—DR. EBRIGHT, DR. REINHARDT AND HOSPITAL INTERNES.

This course is given in the wards of the City aud County Hospital, and consists in a review of the topographical anatomy of the viscera, in systematic instruction in inspection, palpation, percussion, ausculation, and in the adjuncts to physical diagnosis. The class is divided into sections, insuring individual instruction. *Third year*, 3 *hours a week*, 1 *semester*. 1 *unit*.

(*b*) **Physical Diagnosis.**—DR. TAYLOR.

The material for the course is provided by the ambulatory course at the dispensary, and is ample and covers a wide range of conditions. *Third year*, 2 *hours a week*, 1 *semester*. 1⅔ *units*.

2. **Dispensary Clinics.**—DR. TAYLOR, DR. SHIELS AND ———

The class is divided into sections and the students are brought into direct contact with the patients. The students are systematically instructed in the taking of histories, in the general and special examinations of the sick and in treatment. *Third year*, 4 *hours a week throughout the year*. 2⅔ *units*.

3. **Clinics in Internal Medicine.**—PROF. KERR.

This course continues through the third and fourth years. It consists of clinics, clinical conferences, lectures and demonstrations upon the abundant material in the medical ward of the City and County Hospital. Students are assigned to the beds for the study of individual cases. 3 *hours a week through* 2 *years*. 6 *units*.

4. **Lectures on Medicine.**—PROF. MOFFITT.

A systematic course of lectures on internal medicine. Purely didactic teaching is subordinated to lectures illustrated and supplemented by clinical material. Whenever possible patients are brought into the lectures. Themes are assigned to individual students, and the reports are a portion of the regular student's work. *Third and fourth years,* 2 *hours a week through* 2 *years.* 8 *units.*

5. **Clinics in Internal Medicine.**—PROF. MOFFITT.

Material for this course is furnished by the ambulatory clinic at the dispensary. *Third and fourth years,* 1 *hour per week throughout* 2 *years.* 2 *units.*

6. **Bedside Instruction.**—PROF. KERR, DRS. EBRIGHT, BURROWS, COOPER AND WOOLSEY.

The class is divided into sections for ward class work. These sections consist of not more than six students and are assigned to the wards twice weekly. In the wards they are taught the proper taking of histories and the recording of medical phenomena, learn the physical and other signs of disease, and follow the progress of diseases. Through their regular attendance, the students are enabled to follow closely the therapeutic treatment. In connection with the ward work there is a well equipped clinical laboratory in which the students conduct analysis of the blood, gastric contents, urine, and do such other laboratory work as may arise in connection with the ward studies. *Fourth year,* 2 *hours per week through* 1 *semester.* ⅔ *unit.*

7. **Clinical Course at the Out-Patient Department.**—PROF. MOFFITT.

The course consists of one clinic per week to one half the fourth year class, and one ward class session per week to sections of not more than six students. In this course the particular aspects of ambulatory material are thoroughly studied. *Fourth year.* 5-6 *unit.*

8. **Dispensary Clinics.**—DRS. QUINAN AND SHIELS.

The class is divided into sections which attend the ambulatory clinics, where they are instructed in the examinations of patients and in systematic study of internal diseases. *Fourth year,* 1 *hour per week.* 1⅔ *units.*

SURGERY.

ROBERT A. MCLEAN, M.D., Emeritus Professor of Clinical Surgery.

HARRY M. SHERMAN, M.D., Professor of the Principles and Practice of Surgery.

THOMAS W. HUNTINGTON, M.D., Professor of Clinical Surgery.

GEORGE FRANKLIN SHIELS, M.D., Associate Professor of the Principles and Practice of Surgery.

J. HENRY BARBAT, M.D., Instructor in Surgery.

HENRY B. A. KUGELER, M.D., Instructor in Surgery.

SAMUEL J. HUNKIN, M.D., Instructor in Surgery.
HAROLD BRUNN, M.D., Instructor in Surgery.
WALLACE I. TERRY, M.D., Assistant in Surgery.
ALFRED NEWMAN, M.D., Assistant in Surgery.
JAMES P. DUNN, M.D., Assistant in Surgery.
MARSHALL B. RYER, M.D., Assistant in Surgery.
JOHN J. FLOOD, M.D., Assistant in Surgery.
C. G. LEVISON, M.D., Assistant in Surgery.
H. B. REYNOLDS, M.D., Assistant in Surgery.
C. M. COOPER, M.D., Assistant in Surgery.

Instruction in surgery is given during the third and fourth years and, while considerable emphasis is laid on the didactic lectures covering the principles of general surgery, the importance of practical training is realized. This feature of the department's work is covered by ward classes, clinics, a course in surgical pathology and operative courses on the cadaver. Considerable clinical material is found in the wards of the City and County Hospital and numerous cases of minor surgery are received in the out-patient dispensary on New Montgomery street. During his last year the student is brought into contact with patients in the ward classes where he is required to follow a certain number of cases throughout their course. Operative surgery is taught in the public clinics which occur at regular periods during the entire year. In the fourth year conferences are held once in three weeks, at which papers are read and discussed under the guidance of the professor of surgery. A similar meeting is conducted for the third year class by one of the assistants.

1. **General Surgery.**—PROF. SHERMAN AND ASSOCIATE PROF. SHIELS.

The principles of general surgery are discussed in the lectures illustrated by diagrams, photographs, wet and dry specimens and a series of demonstrations on the cadaver. In this course prominence is given to those subjects which are of practical importance to the general surgeon. *Third and fourth years*, 2 *hours a week through* 2 *years*. 8 *units*.

2. **Clinical Surgery.**—PROF. HUNTINGTON AND ASSISTANTS.

This course includes clinics, practical demonstrations and bedside teaching in the wards and operating room of the City and County Hospital. Surgical pathology, general questions of diagnosis, wound treatment and asepsis are discussed at the bedside. Especial attention is paid to the treatment of fractures and dislocations. During the work the student is afforded ample opportunity for the frequent inspection of wounds in all stages of repair, and in addition is given the responsibility for the care of a certain number of cases whose histories must be followed accurately. In the lectures the choice of anaesthetics in ordinary and special cases, their administration in both local and general form, the preparation of instruments and dressings and the selection and disinfection of ligatures and sutures are discussed. In addition there is an explanation of the application of modern technique in the numerous cases that are presented for operation. *Third and fourth years*, 3 *hours a week through the year.* 6 *units.*

3. **Surgical Pathology.**—DR. BRUNN.

This course will present in a practical way the application of many of those points in the previous work in pathology, bacteriology and histology which apply especially to clinical surgery. Wound healing in the skin and the formation of cicatrices, reparative processes of the different tissues and their reactions to surgical manipulations are shown experimentally. Considerable attention is paid during the course to the surgical infections and their effects on the organism. The principles of bacteriolysis, the excretion of micro-organisms by means of the lymphatics through the lungs, liver and kidneys, the new formation of blood vessels and lymphatics and the fate of absorbable suture material are demonstrated on animals. The students are required to make naked eye descriptions of fresh surgical material and to carry through various portions of these tissues for subsequent microscopic examination. The special pathology of tumors and the infectious granulomata is discussed and illustrated by means of fresh preparations and Kaiserling specimens. The work in this course is given entirely in the laboratory and will be wholly practical. *Third year*, 2 *hours a week*, 9 *weeks.* 2 *units.*

4. **Operative Surgery on the Cadaver.**—DR. BARBAT.

The classical operations in the abdomen are performed by the students of the class individually, imitating as closely as possible the arrangement and technique of the operating room. *Fourth year*, 2 *hours a week*, 9 *weeks.* ½ *unit.*

5. **Operative Surgery on the Cadaver.**—DR. KUGELER.

This is an extension of Course 4, in which the surgery of the extremities is studied by practical operations on the cadaver under the same technical arrangements as in Course 4. *Fourth year*, 2 *hours a week*, 9 *weeks.* ½ *unit.*

6. **Wound Dressing, Minor Surgery and Bandaging.**—DR. TERRY.

This course includes the technique of wound dressing and operative treatment. Various methods of bandaging of minor surgical operations are included in this course. *Third year*, 3 *hours a week*, *one-half year.* 1 *unit.*

7. **Ward Classes.**—DRS. LEVISON, COOPER AND REYNOLDS.

The students under the direction of the officers of instruction are given charge of a series of cases for which they are made responsible. History taking, routine clinical examination, diagnosis, treatment and subsequent care of the patient are included in this course. *Fourth year*, 2 *hours a week through one semester.* ⅔ *unit.*

8. **Surgical Dispensary.**—DRS. KUGELER, DUNN, LEVISON AND RYER.

This course is given upon the ambulatory material at the Out-Patient Department and presents in an advantageous manner the particular aspects of surgical ambulatory material. The instruction is entirely practical. Students are assigned to cases, take their histories, conduct their examinations and carry through the treatment in large part themselves. *Third year*, 2 *hours*, *and fourth year*, 3 *hours a week.* 1⅔ *units.*

MICROSCOPICAL AND CHEMICAL DIAGNOSIS.

———M.D.

It is the purpose of this instruction to give the students practical and effective training in the use of those methods and principles of microscopic anatomy, pathology and physiology, which are of assistance to the clinician in reaching a diagnosis. It aims to act as connecting link between the work of the preclinical and clinical years.

1. DR. ———

This course serves as an introduction to the students' work in practical medicine and surgery and is given almost exclusively by the laboratory method. A simple, effective, well-equipped, well-lighted laboratory accomodating one half the class is situated on the grounds of the City and County Hospital, from the wards of which material for the course is obtained. During the year routine instruction is given on the normal and pathological conditions of the blood with thorough training in the various methods of its examination, such as the examination of fresh specimens, haemaglobin estimations and the study of dried and stained preparations. The anaemiae following this and the condition of the blood in all diseases in which blood examinations tend to aid the clinician in his work are thoroughly considered. In every instance material for the class is obtained from cases in the wards. If these do not exist, specimens from the cabinet are used for purposes of instruction. Considerable time is devoted to a thorough study of the malarial blood together with a life-history of the parasites and the modes of transmission of the diseases. The examination of the urine in various diseases forms an important part of the course, and for this purpose the newer and more effective methods are used. The examination of the sputum and feces in health and disease together with a brief review of parasitology and the methods of diagnosis of parasitic diseases are taken up with practical laboratory methods.

Through the courtesy of the officials at the Presidio the secretions and excretions of patients suffering from tropical diseases can be obtained for the use of the class. Considerable emphasis will be laid on this feature of the work since the acquisition of our new insular territories has greatly increased the trade between California and the Orient, and thus renders essential the protection of the State from the introduction of various tropical diseases. This demands the thorough training of students in work of this kind.

The course concludes with a thorough analysis of the gastric secretions and contents, exudates and transudates. *Third year, sections A and B*, 12 *hours a week*, 9 *weeks*. 2 *units*.

OBSTETRICS.

———, Professor of Obstetrics.
JAMES F. McCONE, M.D., Lecturer on Obstetrics.
Z. T. MALABY, M.D., Assistant in Obstetrics.
WM. P. HARVEY, M.D., Assistant in Obstetrics.

The work in the department of obstetrics is given by lectures, demonstration and clinics. The special anatomy and physiology of the female pelvis and its contents are reviewed. Normal and pathological pregnancies, normal and pathological parturitions and normal and pathological puerperae are described in detail. Questions of treatment are discussed and illustrated by means of charts, manikins and specimens.

1. **General Obstetrics.**—DR. MCCONE AND DR. HARVEY.

Lectures and demonstrations. *Third year*, 3 *hours per week throughout the year.* 6 *units.*

2. **Practical Obstetrics.**—DR. MCCONE AND DR. MALABY.

In this course students are allowed to examine patients normally pregnant. Complicated cases of pregnancy and parturition are shown and discussed, their diagnosis and treatments considered. During this period the students attend cases of confinement at the City and County Hospital and patients from the Out-Patient Department. As a rule each student sees six cases of labor. Clinical lecture and demonstration. *Fourth year*, 1 *hour per week throughout the year.* 1 *unit.*

GYNECOLOGY.

CHARLES A. VON HOFFMANN, M.D., Professor of Gynecology.
BEVERLY MACMONAGLE, M.D., Lecturer on Gynecology.
J. MORA MOSS, M.D., Assistant in Gynecology.
WILLIAM G. MOORE, M.D., Assistant in Gynecology.
Z. T. MALABY, M.D., Assistant in Gynecology.

Instruction in gynecology is given during the fourth year. It is the aim of the department to train the students in those aspects of gynecology which relate to the general practice of medicine, and the purely operative specialism is given secondary consideration.

1. **Clinics in Gynecology.**—PROF. VON HOFFMANN AND DR. MOORE.

This course is given upon the material in the wards of the City and County Hospital. The clinic is combined with some bedside instruction. Cases are assigned to students who are required to take their histories, conduct the physical examination and make the diagnosis. When the case so assigned is brought into the clinic or the operating room those students are called who have worked on the patient. In this manner the students are brought into close contact with the cases. In connection with this course, instruction in operative gynecology is given upon the cadaver (Winkel's Manikin). Minor operations and those designed for the repair of the genital tract after obstetrical injuries are either demonstrated to the students or performed by them. *Fourth year*, 2 *hours a week through the year.* 2 *units.*

2. **Lectures in Gynecology.**—DR. MACMONAGLE.

A systematic course of lectures, combined with recitations. *Fourth year*, 1 *hour a week through the year.* 2 *units.*

3. **Dispensary Clinics.**—PROF. VON HOFFMANN, DRS. MOORE, MOSS AND MALABY.

In this course, held at the Out-Patient Dispensary, students are made familiar with ambulatory cases. As it is the purpose of the course to train the students in making physical examinations and in the use of instruments the instruction is given in sections, and is entirely practical. *Fourth year*, 18 *hours for each section.* ⅓ *unit.*

ELECTIVES.

The elective clinical branches which are offered in the fourth year are of two kinds: electives presenting supplementary work, and electives offering special work.

The branches which offer supplementary work are pediatrics, clinical neurology, genito-urinary surgery and orthopedic surgery. Instruction in the general aspects of the diseases of children and of the nervous system is comprised in the work of the Department of Medicine. This general work is, in the elective subjects of pediatrics and clinical neurology, supplemented by specialized work. Instruction in the general aspects of genito-urinary surgery and orthopedic surgery is included in the work of the Department of Surgery. This general work is supplemented by specialized work in the elective courses.

The special electives are diseases of the skin, diseases of the eye, and diseases of the ear, nose and throat. In these courses is included the sole instruction offered in these subjects.

Students carry three electives, one of which must be pediatrics, diseases of the skin, or clinical neurology. Work in the elective branches is largely of a practical nature. It is the intention of the Faculty in the near future to increase the electives in the clinical as well as in the preclinical years.

PEDIATRICS.

WILLIAM B. LEWITT, M.D., Professor of Pediatrics.
SANFORD BLUM, M.D., Assistant in Pediatrics.

The courses in pediatrics consist of lectures, recitations, conferences and practical work in the Out-Patient Dispensary. The dispensary, located in a densely populated section of the city, affords an extremely favorable field for the observation of the diseases peculiar to children.

1. **Lectures and Recitations.**—PROF. LEWITT.

Consideration is given to those ailments of children most frequently met with; particular attention is devoted to the infectious diseases of infancy and childhood and to the subject of infant feeding. *Fourth year*, 1 *hour a week throughout the year.* 2 *units.*

2. **Dispensary Clinics.**—DR. BLUM.

In the dispensary work the students are brought into direct contact with the cases, and in this manner the diseases are systematically studied. *Fourth year*, 2 *hours a week throughout the year.* 1⅓ *units.*

DISEASES OF THE SKIN.

DOUGLASS W. MONTGOMERY, M.D., Professor of Diseases of the Skin.
A. B. GROSSE, M.D., Assistant in Diseases of the Skin.
ERNEST PRING, M.D., Assistant in Diseases of the Skin.
HOWARD MORROW, M.D., Assistant in Diseases of the Skin.

1. **Diseases of the Skin.**—PROF. MONTGOMERY AND ASSISTANTS.

The instruction in the department consists in:

(*a*) A review of the histology and microscopic anatomy of the skin.

(*b*) The study of the pathology and bacteriology of the various cutaneous lesions. So far as possible the instruction in this aspect of the subject is carried parallel to the clinical study of individual cases. In the event of the absence of direct clinical material bearing upon any particular disease, this plan is supplemented by the demonstration and examination of museum specimens and collected tissues.

(*c*) Practical work in the dermatological clinic. Instruction is founded upon the anatomy and pathology, as elucidated in the previous sections. The work is purely practical and individual; no didactic teaching is included. *Fourth year*, 2 *hours a week through the year.* 2 *units.*

CLINICAL NEUROLOGY.

LEO NEWMARK, M.D., Professor of Clinical Neurology.
J. WILSON SHIELS, M.D., Assistant in Clinical Neurology.

The course of instruction in diseases of the nervous system comprises lectures, clinics, demonstrations and practical work. It is the plan of the department to introduce students into the specialized work in nervous diseases.

1. **Clinic in Neurology.**—PROF. NEWMARK.

The work in this course is entirely practical and covers the exhibition of selected dispensary cases and the training of students in the methods of conducting physical examinations on neurological cases and in testing the reactions of degeneration, sense, and perception. Patients suffering from various diseases of the nervous system are shown, questions of diagnosis and prognosis considered, followed by a discussion of the pathological lesions shown by these patients. These discussions are illustrated by numerous pathological specimens prepared by the newer neurological methods. *Fourth year*, 1 *hour per week throughout the year.* 1 *unit.*

2. **Out-Patient Dispensary.**—DR. SHIELS.

The material for this course is abundant in quantity and covers a wide range of conditions illustrating the various phases of ambulatory nervous cases. The work is entirely practical, consisting in the examination of patients and in the observation of the progress of disease and the results of treatment. *Fourth year*, 12 *hours per week throughout* ½ *year.* ⅔ *unit.*

DEPARTMENT OF OPHTHALMOLOGY.

GEORGE HERMAN POWERS, M.D., Professor of Ophthalmology.
GEORGE W. MERRITT, M.D., Assistant in Ophthalmology.

Instruction in ophthalmology is given at the City and County Hospital and at the Out-patient Dispensary. Operative cases are shown at the hospital, while valuable material for diagnosis and treatment is obtained from the ambulatory cases at the dispensary.

1. **Ophthalmology.**—PROF. POWERS AND DR. MERRITT.

In this course the pathology, diagnosis and treatment of the diseases of the eye are covered by means of lectures and practical work. *Fourth year*, 3 *hours a week throughout the year*, 1 *lecture*, 2 *hours practical work per week.* 3⅓ *units.*

OTOLOGY, RHINOLOGY AND LARYNGOLOGY.

William Evelyn Hopkins, M.D., Professor of Otology.
Gardner Perry Pond, M.D., Assistant in Otology.

Instruction in otology, rhinology and laryngology is given at the City and County Hospital and at the Out-Patient Dispensary. The ambulatory cases are studied at the dispensary, while the operative cases are demonstrated at the clinic at the City and County Hospital.

1. **Otology, Rhinology and Laryngology.**—Prof. Hopkins.

Clinic and dispensary course. *Fourth year*, 3 *hours a week throughout the year*, 1 *hour clinic*, 2 *hours practical work* ½ *year.* 1⅔ *units.*

DEPARTMENT OF GENITO-URINARY SURGERY.

John Marshall Williamson, M.D., Professor of Genito-Urinary Surgery.
John C. Spencer, M.D., Assistant in Genito-Urinary Surgery.
Cecil M. Armistead, M.D., Assistant in Genito-Urinary Surgery.
E. L. Wemple, Jr., M.D., Assistant in Genito-Urinary Surgery.

Instruction in genito-urinary surgery is given at the Out-Patient Department and in the wards of the City and County Hospital. In the Out-Patient Department a large number of cases illustrating the various diseases of the genito-urinary tract pass under the observation of the class. Students are thoroughly drilled in the methods of diagnosis and the operative procedures required in the treatment of this class of patients. Selected cases of a graver nature are shown in the wards of the City and County Hospital where their treatment will be carefully noted.

1. **Genito-Urinary Surgery.**—Professor Williamson and Assistants.

This course is entirely practical and is given at the Out-Patient Dispensary on ambulatory cases. A weekly clinic is also held in the wards of the City and County Hospital. 4 *hours a week throughout the year*, 1 *clinic per week*, 3 *hours practical work.* 3 *units.*

ORTHOPEDIC SURGERY.

———, Professor of Orthopedic Surgery.
SAMUEL J. HUNKIN, M.D., Instructor in Orthopedic Surgery.
JOHN J. FLOOD, M.D., Assistant in Orthopedic Surgery.

This course is entirely practical and is given at the Out-Patient Department on ambulatory cases. The diagnosis and treatment of diseases of the joints and the correction of special deformities are considered. Special attention is paid to the making of splints and the application and fitting of braces. *Fourth year,* 3 *hours a week throughout the year.* 2 *units.*

SUMMER COURSES.

In case there is a sufficient number of applicants a limited number of special courses will be given in the months following the close of the spring semester. Application must be made not later than March 15th. Courses begin April 1st.

The tuition for each of these courses is $50. In addition a charge will be made for actual material consumed.

DEPARTMENT OF ANATOMY.

For the Session of 1902-03.

1. **Anatomical and Histological Technique.**—PROF. FLINT AND MR. MILLER.

It will be the aim of this course to give the student a general idea of all the common and many of the finer methods of anatomical and histological technique. Killing, fixation, hardening, sectioning and staining are taken up in detail. The work is nearly all practical and the student must prepare tissues by various methods. Practical work in injecting, preservation of material, corrosions, digestions, etc., is given. Occasional lectures on the principles involved in this work are held.

2. **Histology, Microscopic Organology and Neurology.**—DR. HARDESTY.

This course covers briefly the microscopic features of the simple tissues, the organs and the nervous system. Applicants who so desire may emphasize one feature of the work more than another. A comprehensive series of sections will be prepared for the student so that the maximum amount of time may be spent in the study of the tissues.

3. **Systematic Human Anatomy.**—DR. MOODY.

(*a*) Osteology.
(*b*) Head and neck.
(*c*) Arm and thoracic viscera.
(*d*) Leg and abdominal viscera.

This work is entirely practical and consists of dissections carried on under the direction of the instructor. Topographical and embryological points are emphasized as they arise. Only one of subdivisions a, b, c or d, can be taken in the six weeks alloted for this course.

4. **Special Anatomy for Physicians.**—PROF. FLINT.

The object of this course is to give an opportunity for physicians and others who desire to become familiar with the finer anatomical relations of special regions of the body, as for example, eye, ear, thoracic, abdominal or pelvic viscera. The work is intended especially for those who contemplate work in the special fields of medicine and surgery or for those who wish to familiarize themselves with the main points of topographical anatomy.

5. **Research.**—PROF. FLINT AND DR. HARDESTY.

The laboratory will be open during the summer. A limited number of suitably trained individuals can work upon original problems in anatomy under the direction of the instructors in charge.

DEPARTMENT OF PATHOLOGY.

1. **Special Pathology.**—PROF. TAYLOR.

A course in special branches of pathology for advanced students. A good knowledge of general pathology and experience in pathological work are a prerequisite.

2. **Chemical Pathology.**—PROF. TAYLOR.

This course contemplates the study of the chemistry of pathological processes. For this course an adequate knowledge of chemical physiology and technical experience are a prerequisite.

3. **Bacteriology.**—DR. RYFKOGEL.

Instruction in this course is from the standpoint of general pathology and clinical medicine, the aim being to explain the general relation of the science, to illustrate the etiological relations of disease, and to equip the student and practitioner with the bacteriological procedures of diagnosis now established as necessary adjuncts to clinical medicine.

DEPARTMENT OF PHYSIOLOGY.

1. **Laboratory Work in Physiology.**

A course in the laboratory devoted mainly to muscle-nerve physiology and the physiology of respiration and circulation. The main purpose of the course is to explain the methods of physiological experimentation.

GRADUATES, 1902.

Benjamin Bakewell, B.S.	Oakland
William Baumgarten, Ph.G.	Tehama
Philip August Bill	San Francisco
William Charles Chilson	Fallbrook
Henry David Fanning, A.B.	San Francisco
Ernest Charles Foster	Oakland
Frank Revere Henderson	Merced
George Hippolyte Juilly, B.S.	San Francisco
Ostroilo Stanislaus Kucich	San Francisco
Adelebert Watts Lee	Carson City, Nevada
Pascal Arthur Lensman, A.B.	Königsberg, Prussia
Arthur Thomas McGinty	San Francisco
John Harry Mallery	San Francisco
Joseph Frank Meagher, A.B	San Francisco
Caroline Stow Merwin	Oakland
John Crockett Newton	Berkeley
Joseph Martin O'Donnell, A.B.	Hollister
Harry Elwin Piper	Santa Cruz
James Fowler Pressley	Santa Rosa
Frederick Henry Tebbe	Yreka
Edward Topham	Milpitas
Blanche Coralie Van Heusen	Sacramento
Walter Joseph Marie Williams, A.B	San Francisco
Fredrick H. Zumwalt, Ph.G.	San Francisco

THE LIBRARY OF THE
FEB 26 1931
UNIVERSITY OF ILLINOIS.

MATRICULATES.
1901-2.

FOURTH YEAR CLASS.

Benjamin Bakewell, B.S. (University of California)	Oakland
Josephine Eugenia Barbat, Ph.G. (University of California)	S. F.
William Baumgarten, Ph.G. (University of California)	Tehama
Philip August Bill	San Francisco
David William Brown	Clements
Emma Buckley	San Jose
William Charles Chilson	Fallbrook
James Warren Conlin	San Francisco
Marguerite Deininger	San Francisco
John Gapen Donaldson, Ph.G. (University of California)	Princeton
Henry David Fanning, A.B. (St. Ignatius College)	San Francisco
Ernest Charles Foster	Oakland
Charles Denis Raymond Gleason	San Leandro
Frank Revere Henderson	Merced
Madeline E. Johns	San Francisco
George Hippolyte Juilly, B.S. (Lycée Voltaire, Paris)	S. F.
Daniel William Kamp	Petaluma
Ostroilo Stanislaus Kucich	San Francisco
Adelebert Watts Lee	Carson City, Nevada
John Herbert Leimbach	Sacramento
Birney Alexander Lendrum	San Jose
Pascal Arthur Lensman, A.B. (Calvin College Institut Strasse)	Konigsberg, Prussia
Rudolph Ignatius Longabach	San Francisco
Ergo Alexander Majors	Butte, Montana
John Harry Mallery	San Francisco
William Garrett McGuire	San Francisco
*William Joseph McKinley	Forest Hill
Arthur Thomas McGinty	San Francisco
Thomas Reid McNab	Fillmore
Joseph Frank Meagher, A.B. (St. Ignatius College)	San Francisco
Caroline Stow Merwin	Oakland

*Deceased.

Dan Hazen Moulton	Oakland
John Crockett Newton, Ph.G. (University of California)	S. F.
Joseph Martin O'Donnell, A.B. (St. Mary's College)	Hollister
Harry Elwin Piper	Santa Cruz
George Herman Powers, Jr., A.B. (University of California)	S. F.
James Fowler Pressley	Santa Rosa
Frank L. Putman	San Francisco
Thomas D'Arcy McGee Quinn	San Francisco
Fred Henry Tebbe	Yreka
Edward Topham, Jr.	Milpitas
Blanche Coralie Van Heusen	Sacramento
William John Walsh, B.S. (St. Mary's College)	San Francisco
Sydney Vattel West, B.S. (University of California)	S. F.
Walter Joseph Marie Williams, A.B. (St. Ignatius College)	S. F.
Fredrick H. Zumwalt, Ph.G. (University of California)	S. F.

THIRD YEAR CLASS.

Adolph Baer, B.L., B.S., D.D.S. (University of California)	S. F.
Paul Edward Biber, A.B. (Leland Stanford Jr. University)	S. F.
René Bine	San Francisco
Louis Isidor Breitstein	San Francisco
George De Witt Culver	San Francisco
Palmer Howard Dunbar, D.D.S. (University of California)	S. F.
‡Mary Charlotte Faas	San Francisco
James Alexander Ellis	Alameda
Frank Robert Girard	Oakland
Robert Hilliard Goodale	San Pablo
Henrietta Hagan	San Francisco
James Kiah Hamilton, Jr.	Alameda
Howard Gilman Hill, A.B. (Leland Stanford Jr. Univ.)	Redlands
James Raymond Hurley	San Bernardino
Joseph James Kavanagh	San Francisco
Henry Hymen Lissner	Oakland
Aloysius John McKinnon	San Francisco
Charles Lemon McKown	San Francisco
Welty Daniel Miner	San Francisco
Pernier Albert Mix	Berkeley
Viola Ruth Olcovich, A.B. (Leland Stanford Jr. Univ.)	San Salvador, Central America
Robert Galiher Reynolds, Jr., A.B. (Shurtleff College, Upper Alton, Ill.)	San Francisco

‡Not in regular attendance.

Harry Philip Robarts	San Francisco
Carrie Rosenberg	San Francisco
Walter Scott Rutherford	Oakland
David Emmet Stafford	Redwood City
Earle Almeron Stone, B.L. (University of California)	Oakland
‡Lee Walter Teaby	Geyserville
Herbert Fred True	Los Angeles
Clarence Alfred Wills	Centerville

SECOND YEAR CLASS.

Morgan Dillon Baker, Jr.	San Jose
Maurice Lowell Baum	Livermore
Edward Emery Baumeister, Ph.G. (Univ. of California)	S. F.
Edith Sara Brownsill, B.L. (University of California)	Alameda
Eugene George Campana	Butte, Montana
Paul Castelhun, B.S. (University of California)	San Francisco
John Nolan Chain	San Francisco
William Zabriskie Dahl	Suisun
David Albert Ewing	Seattle, Washington
Arthur Wellesley Foshay, A.B. (Albany Coll.)	Albany, Oregon
George Asa Harker	Eastland
Morton Edwin Hart	San Francisco
Robert Hector, Jr	Loomis
Foster Melanchthon Hoag	Booneville
Louis Clive Jacobs, Ph.G. (Univ. of California)	San Francisco
Fred Kitzing	Halle, Germany
Henning Koford	East Berkeley
Louise Adra Linscott, B.L. (University of California)	Berkeley
Clarke Loring McClish, B.S. (Univ. of the Pacific)	College Park
William Augustus Newbold	San Francisco
Robert Julian Nicholls	Berkeley
Stuart Zeno Peoples	Petaluma
Oscar Charles Reeve	Berkeley
John Peter Sandholdt	Watsonville
Jacob Schwarz	San Francisco
John Francis Slavich	Oakland
Eugene Kneeland Smith	Grass Valley
Fred Hugh Van Tassell	Glendora
‡Victor John Vecki	San Francisco
Wilhelm Waldeyer	San Francisco

‡Not in regular attendance.

Henry Claud Warren	San Francisco
George Augustus Wood	Astoria, Oregon

FIRST YEAR CLASS.

Marcus Abrams	San Francisco
George Cummings Albee, B.S. (Beloit College)	Berkeley
Edgar William Alexander, B.S. (Univ. of California)	Oakland
Coniah Leigh Bigelow, B.S. (Univ. of California)	San Francisco
James Clark Blair, A.B. (University of California)	San Francisco
Albert Bonilla, A.B. (Liceo de Costa Rica National Institute)	S. F
Constantine Raphael Bricca, A.B. (St. Ignatius College)	S. F.
George A. Briggs	Elk Grove
Lewis Eugene Carpenter, B.S. (Univ. of California)	San Francisco
William Franklin Cothran	San Jose
Ambrose Franklin Cowden	Forest Hill
Antonio Menotti dal Piaz	Berkeley
Mary Tom De Haven	San Francisco
Cornelius Thomas Devine, A.B. (Santa Clara Coll.)	Edgewood
Alexander Vincent Doran	San Francisco
‡Will Cunningham Duncan	San Francisco
‡George Louis Edelmann, Ph.G. (Univ. of California)	Petaluma
‡Josephine Julia Gil	Oakland
Anna Maria Gutzwiller	St. Helena
Samuel Percy Hardy	Oakland
Harriette Buttler Harker, A.B. (Vassar College)	Mill Valley
Herman Verplanck Hoffman, A.B. (Santa Clara Coll.)	San Jose
‡Allan Pettit Hughes	Oakland
William Kenny	Sespe
‡George Joseph Kohn	San Francisco
Herman Kronenberg, Ph.G. (Univ. of California)	San Francisco
‡Herbert Nelson Lindsay	Port Townsend, Washington
‡Jee Shin Fwe Pond Mooar	San Francisco
‡James Ignatius O'Dea, A.B. (St. Mary's College)	San Francisco
John William Peck	Oakland
Louis Xavier Ryan, A.B. (St. Ignatius College)	San Francisco
Le Roy Hallowell Saxe	Philadelphia, Pa.
Leo Lloyd Sexton	Fern Hill, Washington
George Samuel Snyder	San Francisco
Gifford Lyne Sobey, A.B. (Leland Stanford Jr. University)	S. F.
‡Gustave Herman Taubles	San Francisco
‡Marion Lawrence Tobriner, D.D.S. (Univ. of California)	S. F.

‡Not in regular attendance.

Eldridge Curts Turner	Sacramento
John Irving Vickerson	Lodi
‡Elthea Wray Wade	San Francisco
‡Alfred Vincent Wepfer	San Francisco
‡Harry Isaac Wiel, A.B. (Leland Stanford Jr. University)	S. F.
‡John Alexander Young, B.S. (St. Mary's College)	San Francisco

‡Not in regular attendance.

HOSPITAL APPOINTMENTS—FROM CLASS OF 1902.

City and County Hospital (San Francisco) University of California Wards—Philip A. Bill, Frank R. Henderson, Ostroilo S. Kucich, Walter J. M. Williams, Fredrick H. Zumwalt. Polyclinic Ward—Henry D. Fanning.

St. Luke's Hospital—Benjamin Bakewell, William C. Chilson, James F. Pressley.

U. S. Marine Hospital—Joseph F. Meagher.

French Hospital—Ernest C. Foster, George H. Juilly.

Pacific Hospital—J Harry Mallery.

Mt. Zion Hospital—Pascal A. Lensman, Harry E. Piper.

Children's Hospital—Caroline S. Merwin, Blanche C. Van Heusen.

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1906-07

UNIVERSITY OF CALIFORNIA

MEDICAL DEPARTMENT

ANNOUNCEMENT OF COURSES

1906-1907

SAN FRANCISCO
JUNE, 1906

UNIVERSITY OF CALIFORNIA

MEDICAL DEPARTMENT

ANNOUNCEMENT

OF

COURSES OF INSTRUCTION

FOR THE ACADEMIC YEAR

1906-1907

BERKELEY
THE UNIVERSITY PRESS
1906

Letters of inquiry concerning the Medical Department should be addressed to Dr. A. A. D'ANCONA, Dean, Medical Department, University of California, San Francisco, Cal.

CALENDAR.

1906.

Aug. 6.—Undergraduate applications for admission and recommendations issued by the principals of accredited schools should be filed with the Recorder of the Faculties at Berkeley on or before August 6. This may be done by mail. Credentials from other universities and from secondary schools outside of California should be filed as early as possible.

Aug. 9.—Academic year begins.

Aug. 9-15.—Entrance examinations at Berkeley for the Academic and Medical Colleges. Applicants will be required to obtain permits to enter the examination room. Examination permits will be issued by the Recorder of the Faculties on or before Wednesday, August 8. But applications for permits to be sent by mail should be made as far in advance of August 8 as will enable applicants to receive their permits by that date. The office of the Recorder of the Faculties is in California Hall.

Aug. 13, 14, 15, 10 a.m. to 12 m.—Registration of students of the third and fourth year classes; payment of fees. In the Dean's office in the main building of the Medical Department in San Francisco.

Aug. 15.—Class work begins.

Sept. 10.—Admission Day: a holiday.

Nov. 29.—Thanksgiving Day: a holiday.

Dec. 23.—Christmas vacation begins.

1907.

Jan. 7.—Second term begins.

Feb. 22.—Washington's Birthday: a holiday.

March 23.—Charter Day: a holiday.

May 1.—Examinations begin.

May 15.—Term ends.

REGENTS OF THE UNIVERSITY.

REGENTS EX OFFICIO.

His Excellency George Cooper Pardee, M.A., M.D., Sacramento
Governor, President of the Regents ex officio.

His Honor John Alden Anderson, - - - Box 342, Sacramento
Lieutenant-Governor.

——— ——— - - - - - - - -
Speaker of the Assembly.

Hon. Thomas Jefferson Kirk, - - - - - - - Sacramento
State Superintendent of Public Instruction.

Hon. Benjamin Franklin Rush, - - - - - - - - - Suisun
President of the State Board of Agriculture.

Rudolph Julius Taussig, Esq., 3134 Sixteenth Street, San Francisco
President of the Mechanics' Institute.

Benjamin Ide Wheeler, Ph.D., LL.D., 1820 Scenic Avenue, Berkeley
President of the University.

APPOINTED REGENTS.

The names are arranged in the order of original accession to the Board.

	†Term Expires.
Isaias William Hellman, Esq., - - - - - - Wells Fargo Nevada National Bank, San Francisco.	1918
Chester Rowell, M.D., - - - - - - - Fresno.	1910
Hon. James Andrew Waymire, - - - - - Alameda.	1908
Hon. Charles William Slack, Ph.B., LL.B., - - - 2224 Sacramento Street, San Francisco.	1910
Jacob Bert Reinstein, M.A., - - - - - 906 Ellis Street, San Francisco.	1912

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† Terms of Regents expire March 1.

JOHN ELIOT BUDD, A.B., - - - - - - - 1916
Stockton.

MRS. PHŒBE APPERSON HEARST, - - - - - - 1914
Pleasanton.

ARTHUR WILLIAM FOSTER, ESQ., - - - - - - 1916
Ferry Building, San Francisco.

GARRET W. MCENERNEY, ESQ., - - - - - - 1920
1414 Post Street, San Francisco.

CHARLES NORMAN ELLINWOOD, M.D., - - - - - 1908
2739 Pacific Avenue, San Francisco.

CHARLES STETSON WHEELER, B.L., - - - - - 1906
2413 Washington Street, San Francisco.

GUY CHAFFEE EARL, A.B., - - - - - - - 1918
12 McClure Street, Oakland.

HON. JAMES WILFRED MCKINLEY, B.S., - - - - 1906
254 South Broadway, Los Angeles.

REV. PETER CHRISTOPHER YORKE, S.T.D., - - - - 1912
1267 Sixteenth Avenue, Oakland.

JOHN ALEXANDER BRITTON, ESQ., - - - - - 1914
1100 O'Farrell Street, San Francisco.

FREDERICK WILLIAM DOHRMANN, ESQ., - - - - - - 1920
1090 Page Street, San Francisco.

OFFICERS OF THE REGENTS.

HIS EXCELLENCY GEORGE COOPER PARDEE, M.A., M.D., Sacramento
President.

VICTOR HENDRICKS HENDERSON, B.L., - - - - - - -
- - - - - - - - - 2345 Telegraph Avenue, Berkeley
Acting Secretary and Land Agent.

ISAIAS WILLIAM HELLMAN, Jr., Ph.B., - - - - - - -
- - - - - - - - Union Trust Building, San Francisco
Treasurer.

CHARLES EDWARD SNOOK, ESQ., - - - - 906 Broadway, Oakland
Counsel.

FACULTY.

BENJAMIN IDE WHEELER, LL.D., Ph.D., President of the University, *ex officio* President of the Faculty.

ARNOLD A. D'ANCONA, A.B., M.D., Dean.

ROBERT A. McLEAN, M.D., Emeritus Professor of Clinical and Operative Surgery.

GEORGE H. POWERS, A.M., M.D., Professor of Ophthalmology.

WM. WATT KERR, A.M., M.B., C.M., Professor of Clinical Medicine.

DOUGLASS W. MONTGOMERY, M.D., Professor of Diseases of the Skin.

JOHN M. WILLIAMSON, M.D., Professor of Genito-Urinary Surgery.

HARRY M. SHERMAN, A.M., M.D., Professor of Surgery.

ALONZO ENGLEBERT TAYLOR, M.D., Professor of Pathology.

CHAS. A. VON HOFFMAN, M.D., Professor of Gynecology.

HERBERT C. MOFFITT, B.S., M.D., Professor of the Principles and Practice of Medicine.

JOSEPH MARSHALL FLINT, B.S., A.M., M.D., Professor of Anatomy.

WM. B. LEWITT, M.D., Professor of Pediatrics.

JACQUES LOEB, M.D., Professor of Physiology.

THOS. W. HUNTINGTON, A.B., M.D., Professor of Surgery.

LEO NEWMARK, M.D., Professor of Clinical Neurology.

BEVERLY MACMONAGLE, M.D., Lecturer on Gynecology.

IRVING HARDESTY, A.B., Ph.D., Assistant Professor of Anatomy.

ROBERT ORTON MOODY, B.S., M.D., Assistant Professor of Anatomy.

ALFRED B. SPALDING, M.D., Assistant Professor of Obstetrics.

FRANK W. BANCROFT, Ph.D., Assistant Professor of Physiology.

JOHN C. SPENCER, M.D., Assistant Professor of Genito-Urinary Surgery.

WALLACE I. TERRY, M.D., Instructor in Surgery.

J. HENRY BARBAT, Ph.G., M.D., Instructor in Surgery.

HENRY B. A. KUGELER, M.D., Instructor in Surgery.

SAMUEL J. HUNKIN, M.D., Instructor in Orthopedic Surgery.

HAYDN M. SIMMONS, Ph.G., M.D., Instructor in Therapeutics.

HENRY A. L. RYFKOGEL, M.D., Instructor in Surgery.

HAROLD BRUNN, M.D., Instructor in Surgery.

CLARENCE QUINAN, M.D., Instructor in Medicine.

George E. Ebright, M.D., Instructor in Medicine.

Philip King Brown, A.B., M.D., Instructor in Clinical Pathology.

Albert B. McKee, Ph.M., M.D., Instructor in Diseases of Ear, Nose, and Throat.

Sanford Blum, A.B., M.D., Instructor in Pediatrics.

Samuel Steen Maxwell, Ph.D., Instructor in Physiology.

Raymond Russ, B.S., M.D., Instructor in Surgery.

Alfred Newman, A.B., M.D., Instructor in Surgery.

Howard Morrow, M.D., Instructor in Dermatology.

Tracy G. Russell, A.B., M.D., Instructor in Surgery.

Carl S. G. Nagel, M.D., Instructor in Ophthalmology.

Herbert Allen, A.B., M.D., Instructor in Clinical Pathology.

L. W. Allen, M.D., Instructor in Surgery.

J. Wilson Shiels, M.D., Instructor in Medicine.

Chas. M. Cooper, M.R.C.S. Eng., Instructor in Medicine.

A. J. Lartigau, M.D., Assistant in Gynecology and Pediatrics.

Fred Grant Burrows, A.M., M.D., Assistant in Medicine.

Cecil M. Armistead, M.D., Assistant in Genito-Urinary Surgery.

Chester H. Woolsey, B.S., M.D., Assistant in Medicine.

William G. Moore, M.D., Assistant in Gynecology.

E. L. Wemple, Jr., M.D., Assistant in Genito-Urinary Surgery.

James T. Watkins, M.D., Assistant in Surgery.

Anna M. Flynn, M.D., Assistant in Ophthalmology.

Theodore C. Burnett, M.D., Assistant in Physiology.

T. Brailsford Robertson, B.S., Assistant in Physiology.

Rawlins Cadwallader, M.D., Assistant in Obstetrics.

Harry P. Robarts, M.D., Assistant in Surgery.

Camillus Bush, B.S., M.D., Assistant in Surgery.

Jacob Schwartz, M.D., Assistant in Surgery.

Rachel L. Ash, B.S., M.D., Assistant in Medicine.

Milton B. Lennon, A.B., M.D., Assistant in Medicine.

Harold P. Hill, M.D., Assistant in Medicine.

Lionel S. Schmitt, M.D., Assistant in Dermatology.

Harry E. Alderson, M.D., Assistant in Dermatology.

Florence McCoy Hill, M.D., Assistant in Dermatology.

REQUIREMENTS FOR ADMISSION.

Applicants for admission to the first year of the medical course and applicants for advanced standing must present evidence of having completed at least two full years of preliminary training in the undergraduate department of a college or university of recognized standing. Satisfactory evidence must also be presented that during these two years the applicant has completed courses of the following values:—

Chemistry. (1) A course in general inorganic chemistry, including lectures, recitations, and experiments. Lectures and recitations 3 hrs. In this course should be included the main facts of physical chemistry.

(2) Laboratory course. Qualitative analysis, 6 hrs. throughout the year.

(3) Quantitative analysis. Gravimetric and volumetric. Laboratory 9 hrs. a week, one half-year.

(4) Organic chemistry. A course of lectures, demonstrations, and recitations in organic chemistry. 2 hrs. a week, one half-year.

(5) Organic chemistry. Laboratory course, 9 hrs. a week, one half-year.

Courses 1, 3, 5, and 8B and 10A in the Department of Chemistry in the University of California cover the work outlined above, which constitutes the minimum required amount of chemistry.

Physics. (1) A course in general physics, including lectures, recitations, and laboratory work. 6 hrs. a week throughout one year.

(2) A laboratory course in physical measurements. 6 hrs. a week throughout one year.

Courses 1 and 2A in the Department of Physics of the University of California cover the work outlined above, which constitutes the minimum required amount of physics.

Zoology. (1) A general course in zoology, giving a knowledge of the main facts of biology, covering structure, life history, and vital activities of selected types of animal life. The chief points of cytology and development, as well as a clear conception of the doctrine of descent, should also be given in this course. 2 hrs. a week throughout one year.

(2) Laboratory work in zoology covering the points brought out in Course 1, with objectivity and the training of the powers of observation as its special features. Practice in the recording of scientific phenomena both by means of word description and drawings should also be given. 6 hrs. a week throughout one year.

(3) A course in embryology. 8 hrs. a week, one half-year.

Courses 1, 2, and 3 in the Department of Zoology, or 1 and 2 in the Department of Zoology and the course in Embryology in the Department of Physiology, in the University of California cover, in general, the minimum work required in zoology.

English. A course in English composition consisting of consultation and theme work. At least 3 hrs. a week throughout one year.

French and German. Applicants must possess a reading knowledge of scientific French and German.

The standard in the required courses outlined above must correspond and be at least equal to the standard of those given in the Academic Colleges of the University of California.

It is suggested that students should also during their preliminary academic training take certain elective courses which would materially increase the efficiency of their preparation for later work in medicine. Advanced mathematics, comparative anatomy, embryology, laboratory work in organic chemistry, and advanced work in physics covering the theory of solutions, are courses of this nature. Entering students, therefore, are urged to present them on admission with the required work. The adequate training of a physician certainly presupposes a knowledge of physics, chemistry, biology, and the modern languages as outlined above; but the need of a broad foundation in general culture can not be overestimated, and students should select from the curricula of their colleges as many courses as possible beyond those demanded and recommended by the Faculty of the Medical Department.

ADVANCED STANDING.

Students of recognized medical colleges are admitted to the second, third, and fourth year classes only upon examinations covering the subjects in which they seek to be accredited. They must first present to the administrative officer evidence that they have satisfied the regular matriculation requirements, and obtain from the Dean authorization for examination.

JOINT COURSE IN NATURAL SCIENCE AND MEDICINE LEADING TO THE DEGREES OF B.S. AND M.D.

The requirements for admission to this course are those of the College of Natural Sciences, provided that chemistry and advanced mathematics be offered. Prospective students who contemplate taking this course are advised to present, likewise, additional credits in modern languages and mathematics. The following is an outline of the course in the College of Natural Sciences at Berkeley covering a period of two years:—

	Units.
English, approximately	4
French, approximately	6
German, approximately	6
Mathematics, approximately	6
Physics, approximately	12
Chemistry, approximately	15
Zoology and Comparative Anatomy, approximately	15
Military Science and Physical Culture and Hygiene	9
Total	73

Owing to the annual changes in the courses offered by the various academic departments of the University, the exact distribution of these units is left to the discretion of the Joint Committee of the Academic and Medical Faculties in order to provide an elastic system capable of conforming to these changes.

Students intending to take the course should enter upon it at the beginning of the freshman year. They should also seek the advice of the chairman or some other member of the Joint Committee before making out their schedule of studies for the first half of the freshman year.

After the completion of their work in the Academic Department in Berkeley, students enter upon the work of the first two years of the College of Medicine (also in Berkeley) to complete the studies leading to the bachelor's degree. These consist of:—

	Units.
Anatomy	38
Physiology	19
Pathology	18
Total	75

The work of these courses is described in detail in another part of this announcement.

Upon the completion of the course in the College of Natural Sciences above outlined, together with the first two years in the College of Medicine (consisting of Anatomy, Physiology, Pathology, Bacteriology), students will be granted the degree of Bachelor of Science on the recommendation of the Faculty of Natural Sciences.

After receiving the bachelor's degree, students enter upon the two years' study of the clinical branches of medicine in San Francisco, and upon satisfactory completion of these are granted the degree of Doctor of Medicine.

Special note should be taken by all students looking to the study of medicine in this University, that the preliminary course here described is in its essentials the only preparation that will admit to the clinical branches of medicine. Those, therefore, who are enrolled in the College of Letters or Social Sciences, or in any of the technical colleges, and who desire to study medicine, will need to supplement the usual courses in these colleges by such essentials of the course here outlined (French, German, Physics, Chemistry, and Zoology) as may not have been included in their original schedules.

LOCATION.

Beginning in August, 1906, the work of the first and second years of the medical course will be conducted at Berkeley. The lecture rooms and laboratories of the departments of Physiology and Pathology will be located in the Rudolph Spreckels Physiological Laboratory; those of the Department of Anatomy in East Hall.

The main building of the Medical Department, located in the western part of San Francisco, at Second and Parnassus avenues, south of Golden Gate Park, is devoted to the work of the third and fourth years.

BOARDING.

The expense of living in San Francisco is not great. Good board with room rent may be procured at the rate of $5 per week at a convenient distance from the College building.

CLINICAL FACILITIES IN SAN FRANCISCO.

The ward work and clinics are held in the wards of the City and County Hospital, where an abundance of material of all sorts is obtained for the work in medicine, surgery, and gynecology.

The medical schools in San Francisco are given practical control of the clinical material in the hospital, so that as far as purposes of instruction are concerned some of these wards are equivalent to a private hospital controlled by the department.

Owing to the recent acquisition of the Hawaiian and Philippine Islands and the consequent establishment of a large garrison on the Government reservation in San Francisco, abundant opportunity for the study of the different phases of many tropical diseases is afforded.

The municipality has determined to erect a new City and County Hospital on the pavilion system, which will be modern in every respect and will provide improved laboratory and clinical facilities for medical students.

Practical instruction in ambulatory cases will be given in the main building of the Medical Department.

HOSPITAL APPOINTMENTS.

The position of interne, or House Physician and Surgeon, in the City and County Hospital, is open each year to six members of the graduating class who recommend themselves to the Faculty by their diligence and general fitness for the appointments. Internes receive their board and lodging for one year and have opportunities for obtaining an invaluable experience in various fields of medicine and surgery. Interneships in many of the private hospitals in San Francisco are filled annually either upon the recommendation of the Medical Department or by competitive examination.

FEES.

First Year.

Matriculation	$5.00
Tuition	150.00
Dissecting material	12.00

The fees are payable at the time of matriculation.

A key and breakage deposit of $25 is required for the use of lockers and to cover cost of material used in the laboratories and damage to College buildings and equipment. At the close of the session the unexpended balance is returned to the student.

A rental of $5 a year is charged for the use of a microscope, and $2 for an immersion lens. Each student must provide himself with a microscope.

A rental of $2.50 is charged for the use of a set of bones and a deposit of $7.50 as security for their return in good condition.

Second Year.

Tuition	$150.00
Dissecting material	14.00
A key and breakage deposit of	25.00

Third Year.

Tuition	$150.00
A key and breakage deposit of	10.00

Fourth Year.

Tuition	$150.00
Graduation	25.00
A key and breakage deposit of	10.00

LIBRARY.

The library contains about 3,000 volumes, including many of the current text-books and some of the better monographs. Along certain lines the library is particularly strong. It is the policy of the department to make the collections uniform and to obtain complete files of the more important periodicals published in English, French, and German. Among the journals in the library are the following:—

American Journal of Medical Sciences, American Journal of Obstetrics, American Medicine, Anatomischer Anzeiger, Anatomische Hefte, Annals of Surgery, Archiv für Anatomie und Entwickelungsgeschichte, Archiv für Entwickelungsmechanik der Organismen, Archiv für Klinische Chirurgie, Archiv für Pathologische Anatomie und Physiologie, Archives of Surgery, Arbeiten aus dem Kaiserlichen Gesundheitsamte, Berliner Klinische Wochenschrift, Boston Medical and Surgical Journal, British Medical Journal, Centralblatt für Bakteriologie und Parasitenkunde, Centralblatt für Chirurgie, Centralblatt für Gynecologie, Centralblatt für Klinische Medicin, Congrès Français de Chirurgie, Deutsche Medicinische Wochenschrift, Ergebnisse der Anatomie und Entwickelungsgeschichte, Fortschritte der Medicin, Jahrbücher der Gesammten Medicin, Jahresbericht der Gesammten Medicin, Jahresbericht über die Fortschritte der Anatomie und Entwickelungsgeschichte, Jahresbericht über die Fortschritte der Anatomie und Physiologie, Jahresbericht über Pathogenen Mikroorganismen, Journal of the American Medical Association, Journal of Comparative Neurology, Journal of Experimental Medicine, Journal of Hygiene, Journal of

Medical Research, London Lancet, Medical Record, Medical Review of Reviews, Morphologische Arbeiten, New York Medical Journal, Philadelphia Medical Journal, Revue de Chirurgie, Transactions of American Surgical Association, Verhandlungen der Deutschen Gesellschaft für Chirurgie, Wiener Medizinische Wochenschrift, Zeitschrift für Chirurgie, Zeitschrift für Morphologie und Anthropologie.

ORGANIZATION OF INSTRUCTION.

Session of 1906-07.

Summary of Courses. Instruction is divided into three classes: didactic, demonstrative, and practical. Under the head of didactic instruction are comprised lectures, recitations, and conferences. Under the head of demonstrative instruction are included demonstrations and clinics. Under the head of practical instruction are grouped all varieties of work which the students do for themselves —laboratory sessions, bedside study, and sectional dispensary work.

Eighteen hours of didactic teaching constitute one unit, while thirty-six hours of demonstrations and clinics have the same value. This is likewise the valuation for such practical courses as include the entire instruction in the subject. Fifty-four hours of practical work which is associated with a didactic course constitute one unit. The unit-valuation of practical work thus depends upon whether it represents a part or constitutes the whole of the instruction, since the scope of work will obviously be different. For example, the laboratory work in physiology accompanies a didactic course upon physiology, and the ward classes in surgery accompany didactic and clinical courses in surgery. Of such practical work fifty-four hours constitute a unit. On the other hand, the laboratory course in bacteriology comprises all the work in bacteriology, and possesses the corresponding scope, and of this work thirty-six hours constitute one unit.

Thirty-two to thirty-six units represent the work of the average year. Exceptional students can carry two to four units more, and are urged to elect them. So far as has been possible, the work has been concentrated. The advantages of concentration are many. The system offers more work to the student and is conducive to favorable conditions of study, in that students in the prolonged and consecutive periods apply themselves better and enter more deeply into the subject. It also grants to the student much more free time, time of the greatest value for purposes of private study or advanced work.

It is believed that the students on account of this free time will take advantage of the elective courses offered by the departments of Anatomy, Physiology, and Pathology. In the extension and development of the courses in medicine it is planned to introduce the elective system into the clinical as well as the preclinical years, and to allow the student throughout his course the right to elect a large percentage of his work. Instruction extends through thirty six weeks.

CLASS STANDING AND EXAMINATIONS.

For the determination of class standing for advancement and graduation the results and markings of all studies and examinations consist of ''Passed with Honor,'' ''Passed,'' and ''Not Passed.'' The value of the markings ''Passed with Honor'' is expressed in honor units, which correspond to the unit value of the particular course; the sum total of the honor units determines the class standing of honor students, and upon such class standing are based the recommendations for interneships.

Under the term ''Examination'' is understood the judgment of the instructor upon the work of a student. This judgment may be reached in three ways: by personal contact with the students and observation of their routine work, by oral examinations, and by written examinations. The grading of students upon the basis of a written examination alone is not practiced.

At the close of each academic year the following examinations are held:—

First Year.—Microscopic anatomy, chemical physiology, elementary physiology.

Second Year.—Systematic human anatomy (including embryology), general physiology, morphological pathology, chemical pathology, and bacteriology.

Third Year.—Therapeutics, materia medica, obstetrics, and general surgery.

Fourth Year.—Internal medicine, clinical medicine, general surgery, clinical surgery, gynecology, operative obstetrics, and three of the elective branches, one of which must be neurology, pediatrics, or dermatology.

Students who fail to pass the examinations in three or more subjects must repeat the year, the branches in which they were conditioned constituting their curriculum. Those students who fail in two courses must pass one of them before the opening of the academic year following that in which they were incurred, so that not more than one condition can be carried into the second, third, or fourth year; and this must be passed in order to render the student eligible for the examinations held at the end of that session. A condition in any subject completed in a given year must be removed within thirty days following the opening of the succeeding academic session. Under all circumstances prerequisites must be respected. Inasmuch as there will be no opportunity during the clinical years to make up practical courses, no student will be permitted to carry into the third year a condition in a course which includes laboratory work. Fourth-year students who fail in one or two branches may reappear for examination after three months. In the event of their passing the examinations at that time they will be recommended to the Board of Regents for the degree; should they then fail in one branch even, they must repeat their fourth year, the branches in which they were conditioned constituting their curriculum. To the heads of departments is reserved the right to determine whether a student who has failed in a course shall be entitled to appear for reëxamination at the beginning of the next academic year, or be required to repeat the course. The Faculty reserves the right to sever the connection of any student with the Medical Department at any time for what it deems either mental or moral unfitness for a career in medicine.

REQUIREMENTS FOR GRADUATION.

1. The candidate for the degree of Doctor of Medicine must have attained the age of twenty-one years. He must give satisfactory evidence of possessing a good moral character, which includes unexceptional conduct while in the department.

2. He must have studied medicine four full years, and must have attended four regular courses in separate calendar years, the last of which must have been in the University of California.

3. He must have done the required work and passed the stated examinations.

4. He must have paid in full the college fees.

COURSES OF INSTRUCTION.

ANATOMY.

*JOSEPH MARSHALL FLINT, M.D., Professor of Anatomy.
IRVING HARDESTY, Ph.D., Assistant Professor of Anatomy.
ROBERT ORTON MOODY, M.D., Assistant Professor of Anatomy.
EDWARD MILLER, Technical Assistant.

The courses of instruction in anatomy are given in Berkeley, in East Hall. The classes are divided into small groups in order to avoid the inevitable noise and disturbance which results from a large group of students working together. Material for dissection is prepared in the embalming room, which is equipped with the necessary hydraulic apparatus to inject both the embalming fluids and the color masses for the arteries and veins at any desired pressure. After this process is completed the bodies are preserved in wood alcohol vapor or a carbolic solution.

The teaching museum consists of specially prepared corrosions, injections, dissections, and models.

The laboratory for miscroscopic anatomy is outfitted with microtomes and is supplied with all the stains and reagents necessary for the ordinary and finer methods of microscopic preparation.

The routine work of the department falls into the natural divisions of gross and microscopic anatomy, and some effort is made to have the transition between the two as gradual as possible. Inasmuch as the process of formal education must end sooner or later, the department endeavors as far as possible to make the students entirely independent. This is further encouraged in the elective system, by which a certain amount of selection is allowed in the regular work of the department.

MICROSCOPIC ANATOMY.

The various tissues and organs of the body are studied from the developmental point of view so that their gradual differentiation from the embryonic to the adult form is taken up. Since function

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* Absent on leave, 1906-07.

and structure can not be separated in the consideration of the microscopic appearance of tissues and organs, their chief physiological aspects are briefly considered. The study of each group consists of three main steps: (1) For the purpose of orientation, the consideration of their macroscopic appearances, relations, and physiology. (2) The transition from the macroscopic to the microscopic conditions is made with the dissecting microscope and teasing methods, free hand or frozen sections. (3) The more detailed study is made from specimens prepared by methods designed to emphasize their principal microscopic features. In this course the value of comparing the organs of a series of animals is recognized and the student has a typical set of comparative specimens. Routine sections are, as a rule, prepared by the technical assistant and are only mounted by the student. In order to familiarize himself with the details of histological technique, each member of the class must present during the year acceptable preparations of different organs made by various methods. This includes the process of fixation, embedding in both paraffin and celloidin, and staining by the common methods. On the completion of a group of closely related subjects, the student is required to incorporate the results of his laboratory work in a paper fully covering the ground. The paper must be illustrated with laboratory drawings and contain an epitome of the student's notes and collateral reading.

1. **Histology.** Professor Hardesty.

In this course are considered the anatomy of the cell, its variations in form, the conditions and processes of its proliferation, and the modifications which result in its differentiation into a cell of specialized type. The formation of the embryonic germ layers is then taken up and followed by a detailed study of the different fundamental tissues of the body, as these are composed of cells and cell products and derived from one or the other of the germ layers. The study is always comparative.

First year, 4 laboratory periods, 4 lectures a week, for 9 weeks. 3⅓ units.

2. **Microscopic Organology.** Professor Hardesty.

The organs are discussed with reference to the form, arrangement, and number of the fundamental tissues composing them, with special reference to the structural and functional relations to other organs. In each case the student begins first with the tissue in situ, and special effort is made to bridge the gap between the appearance of the organs in gross and under the microscope.

First year, 4 laboratory periods, 4 lectures a week, for 9 weeks. 3⅓ units.

3. **Neurology.** Professor HARDESTY.

In this course special attention is paid to the macroscopic and microscopic architecture of the central nervous system and the organs of special sense. The neurone studied in Course 1 is used as the unit in the construction of the nervous system with the view to tracing the origin, development, and final arrangement of the different pathways for nerve impulses. Considerable attention is given to the consideration of the growth and development of the nervous system.

First year, 4 lectures, 4 laboratory periods a week, for 9 weeks. 3⅓ units.

SYSTEMATIC HUMAN ANATOMY.

The courses in systematic anatomy are given by practical work entirely. There are no lectures or quizzes. Students are urged to work independently as far as possible. Special emphasis is laid upon the importance of visual images rather than word pictures of the various structures of the body. The student dissects from the standpoint of the segment, and to a great extent looks upon the various structures as they are found in the body from the point of view of their comparative relationship and development. Topographical relations are shown by models and frozen or formalin sections. In order to emphasize the importance of original work, a series of statistical investigations is being constantly carried on by the students through the agency of tabulation charts on which they record the important variations found in their dissections. Special attention is paid to the variations of one particular part of the body.

4. **Osteology.** Professor MOODY.

Each student is loaned a skeleton and is required to model in clay and draw each bone in the body.

First year, 6 half-days a week, for 8 weeks. 4⅔ units.

5. **Head and Neck.** Professor MOODY and Dr. LEE.

First year, 6 half-days a week, for 7 weeks. 4⅔ units.

6. **Arm and Thorax.** Professor Moody and Dr. Lee.

First year, 6 half-days a week, for 7 weeks. $4\frac{2}{3}$ units.

7. **Leg and Abdominal Viscera.** Professor Moody and Dr. Lee.

First year, 6 half-days a week, for 7 weeks. $4\frac{2}{3}$ units.

In his second year the student must repeat at least two of Courses 5, 6, and 7, provided he has already dissected the entire body in his first year. Research will be accepted in lieu of these courses.

8. **Special Anatomy for Physicians and Advanced Students.** Professor Moody.

This course consists of special dissections designed primarily for physicians and others who wish to become familiar with the anatomy of particular regions of the body, such as the eye, ear, thorax, pelvis, and abdominal viscera. The work is largely independent. A limited number of regular students will be permitted to take this course as an elective after finishing the required work of the department.

Hours arranged to suit applicants. 4-8 units.

9. **Research.** Professors Hardesty and Moody.

Students and others who are sufficiently prepared will be allowed to undertake research upon original problems under the direction of the head of the department. A certain number of units in Course 9 will be accepted in lieu of the required systematic anatomy of the second year from students who have shown marked ability in their work.

PHYSIOLOGY.

Jacques Loeb, M.D., Professor of Physiology.

Frank W. Bancroft, Ph.D., Assistant Professor of Physiology.

Samuel Steen Maxwell, Ph.D., Instructor in Physiology.

Theodore C. Burnett, M.D., Assistant in Physiology.

T. Brailsford Robertson, B.S., Assistant in Physiology.

The courses in Physiology are given during the first and second years.

First Year.

1. **Lectures in Physiology.** Dr. Maxwell.

The lectures will cover the main facts in the physiology of the blood and circulation, respiration, absorption, secretion, and muscle-nerve physiology.

4 lectures a week, for 9 weeks.

2. **Laboratory Work in Physiology.**

Dr. Maxwell and Mr. Robertson.

In connection with Course 1.

3 three-hour laboratory periods a week, for 9 weeks.

Second Year.

3. **Lectures in Physiology.** Professor Bancroft.

Physiology of the central and peripheral nervous systems and the senses.

4 lectures a week, for 9 weeks.

4. **Laboratory Work in Physiology.**

Professor Bancroft and Dr. Burnett.

In connection with Course 3.

3 three-hour laboratory periods a week, for 9 weeks.

5. **Chemical Physiology.**

Lectures on the chemical composition of the body, and on digestion, nutrition, and metabolism.

5 lectures a week, 9 weeks.

6. **Laboratory Course in Chemical Physiology.**

Laboratory work on the subjects covered in 5.

15 hrs. a week, 9 weeks.

PATHOLOGY.

Alonzo Englebert Taylor, M.D., Professor of Pathology.
William T. Jane, Technical Assistant.

Instruction in pathology is given in the Hearst Laboratory of Pathology in Berkeley during the second year, and at the City and County Hospital in San Francisco during the fourth year.

1. **Morphological Pathology.** Professor Taylor.

The course includes instruction upon the chief organs and tissues in the order of their importance.

4 lectures, 12 hours' laboratory work a week, 18 weeks. 8 units.

Prerequisite: Completion of the course in first year histology and microscopic anatomy.

2. **Chemical Pathology.** Professor TAYLOR.

In this course disease is studied from the point of view of disturbed functionation; this and the course previously detailed contrast pathological physiology with pathological anatomy.

5 lectures, 15 hrs. laboratory work per week, 9 weeks. 5 units.

Prerequisite: Completion of the first-year course in chemical physiology.

3. **Bacteriology.** Professor WARD.

A course upon general microbiology and pathologic bacteriology.

5 lectures, 15 hrs. laboratory work a week, 9 weeks. 5 units.

Prerequisite: Completion of the first-year course in histology and microscopic anatomy.

4. **Autopsy Course.** —— ——.

During the fourth year an autopsy course is conducted in the City and County Hospital. The members of the fourth-year class witness and participate in the autopsies held upon the subjects, which during life were the objects of the clinical studies of the same students.

Two sections of 1 semester each, 4 hrs. a week, except in the event of absence of material. 1 unit.

Research Department of Hearst Pathological Laboratory.

The private laboratories of pathology are installed with equipments for original work along morphological and chemical lines. These laboratories are open to physicians and students desirous of doing research in pathology. Students are urged to undertake original work during their undergraduate years. The sole prerequisite to admission is adequate training. The laboratories are under the direction of the Professor of Pathology.

THERAPEUTICS.

HAYDN M. SIMMONS, Ph.G., M.D., Instructor in Therapeutics.

1. **Physiological Action of Drugs.** Dr. SIMMONS.

The action and application of the chief remedial agents are considered. Lectures, demonstrations, and recitations.

Third year, 3 hrs. a week, 10 weeks. 3 units.

2. **Materia Medica and Pharmacy.** Dr. SIMMONS.

The course is purely practical, embracing toxicology, the compounding of prescriptions, instruction in incompatibilities, and the general regulations for the safe and efficient employment of remedial measures.

Third year, 2 hrs. a week, 27 weeks. 3 units.

MEDICINE.

WILLIAM WATT KERR, M.D., Professor of Clinical Medicine.

HERBERT C. MOFFITT, M.D., Professor of the Principles and Practice of Medicine.

CLARENCE QUINAN, M.D., Instructor in Medicine.

GEORGE E. EBRIGHT, M.D., Instructor in Medicine.

J. WILSON SHIELS, M.D., Instructor in Medicine.

CHARLES M. COOPER, M.D., Instructor in Medicine.

FRED G. BURROWS, M.D., Assistant in Medicine.

CHESTER H. WOOLSEY, M.D., Assistant in Medicine.

RACHEL L. ASH, B.S., M.D., Assistant in Medicine.

MILTON B. LENNON, A.B., M.D., Assistant in Medicine.

Instruction in medicine is founded upon practical work based upon the available clinical material. Direct contact with disease in its varied manifestations can alone train the student in the accurate observation of sickness, in the judicious application of the methods of diagnosis, and in the rational employment of therapeusis. The material in internal medicine at the disposal of the staff of instructors and students is large in quantity and rich in quality. General medical work constitutes the greater bulk of the work of physicians, and therefore properly requires a large portion of the time of the student. The general plan of the department is to ground the students in the fundaments of medicine during the third year, and during the fourth year to place the students upon individual practical work.

1. **Physical Diagnosis.** Dr. EBRIGHT and Hospital Internes.

This course is given in the wards of the City and County Hospital, and consists in a review of the topographical anatomy of the viscera, in systematic instruction in inspection, palpation, percussion, auscultation, and in the adjuncts to physical diagnosis. The class is divided into sections, insuring individual instruction.

Third year, 3 hrs. a week, 1 semester. 1 unit.

2. **Dispensary Clinics.** Drs. Ash and Lennon.

The class is divided into sections and the students are brought into direct contact with the patients. The students are systematically instructed in the taking of histories, in the general and special examinations of the sick, and in treatment.

Third year, 4 hrs. a week, throughout the year. 2⅔ units.

3. **Clinics in Internal Medicine.** Professor Kerr.

This course continues through the third and fourth years. It consists of clinics, clinical conferences, lectures and demonstrations upon the abundant material in the medical ward of the City and County Hospital. Students are assigned to the beds for the study of individual cases.

3 hrs. a week through 2 years. 6 units.

4. **Clinics on Medicine.** Professor Moffitt.

Clinical work at Out-Patient Department.

Third and fourth years, 2 hrs. a week through 2 years. 8 units.

5. **Bedside Instruction.** Professor Kerr,
Drs. Ebright, Burrows, and Woolsey.

The class is divided into sections for ward class work. These sections consist of not more than six students and are assigned to the wards twice weekly. In the wards they are taught the proper taking of histories and the recording of medical phenomena, learn the physical and other signs of disease, and follow the progress of diseases. Through their regular attendance, the students are enabled to follow closely the therapeutic treatment. In connection with the ward work there is a well equipped clinical laboratory in which the students conduct analysis of the blood, gastric contents, urine, and do such other laboratory work as may arise in connection with the ward studies.

Fourth year, 2 hrs. a week through 1 semester. ⅔ unit.

6. **Dispensary Clinics.** Dr. QUINAN.

The class is divided into sections which attend the ambulatory clinics, where they are instructed in the examinations of patients, and in systematic study of internal diseases.

Fourth year, 1 hr. a week. 1⅔ units.

7. **Lectures on Practical Therapeutics.** Dr. SHIELS.

Third and fourth years, 2 hrs. a week. 8 units.

SURGERY.

ROBERT A. MCLEAN, M.D., Emeritus Professor of Clinical Surgery.

HARRY M. SHERMAN, A.M., M.D., Professor of the Principles and Practice of Surgery.

THOMAS W. HUNTINGTON, A.B., M.D., Professor of Clinical Surgery.

J. HENRY BARBAT, M.D., Instructor in Surgery.

HENRY B. A. KUGELER, M.D., Instructor in Surgery.

WALLACE I. TERRY, M.D., Instructor in Surgery.

HAROLD BRUNN, M.D., Instructor in Surgery.

RAYMOND RUSS, B.S., M.D., Instructor in Surgery.

ALFRED NEWMAN, M.D., Instructor in Surgery.

L. W. ALLEN, M.D., Instructor in Surgery.

TRACEY G. RUSSELL, M.D., Instructor in Surgery.

HENRY A. L. RYFKOGEL, M.D., Instructor in Surgery.

HARRY P. ROBARTS, M.D., Assistant in Surgery.

CAMILLUS BUSH, M.D., Assistant in Surgery.

JACOB SCHWARTZ, M.D., Assistant in Surgery.

Instruction in surgery is given during the third and fourth years, and while considerable emphasis is laid on the didactic lectures covering the principles of general surgery, the importance of practical training is realized. This feature of the department's work is covered by ward classes, clinics, a course in surgical pathology, and operative courses on the cadaver. Considerable clinical material is found in the wards of the City and County Hospital, and cases of minor surgery are treated in the Out-Patient Dispensary. During his last year the student is brought into contact with patients in the ward classes, where he is required to follow a certain number of cases throughout their course. Operative surgery is taught in the public clinics which occur at regular periods during the entire year. In the fourth year conferences are held once in three weeks, at which papers are read and discussed under the guidance of the professor of surgery. A similar meeting is conducted for the third-year class by one of the assistants.

1. **General Surgery.** Professor SHERMAN.

The principles of general surgery are discussed in the lectures illustrated by diagrams, photographs, wet and dry specimens, and a series of demonstrations on the cadaver. In this course prominence is given to those subjects which are of practical importance to the general surgeon.

Third and fourth years, 2 hrs. a week through 2 years. 8 units.

2. **Clinical Surgery.** Professor HUNTINGTON and Assistants.

This course includes clinics, practical demonstrations, and bedside teaching in the wards and operating room of the City and County Hospital. Surgical pathology, general questions of diagnosis, wound treatment, and asepsis are discussed at the bedside. Special attention is paid to the treatment of fractures and dislocations. During the work the student is afforded ample opportunity for the frequent inspection of wounds in all stages of repair, and in addition is given the responsibility for the care of a certain number of cases whose histories must be followed accurately. In the lectures the choice of anæsthetics in ordinary and special cases, their administration in both local and general form, the preparation of instruments and dressings and the selection and disinfection of ligatures and sutures are discussed. In addition there is an explanation of the application of modern technique in the numerous cases that are presented for operation.

Third and fourth years, 3 hrs. a week through the years. 6 units.

3. **Surgical Pathology.** Drs. BRUNN and RYFKOGEL.

This course will present in a practical way the application of many of those points in the previous work of pathology, bacteriology, and histology which apply especially to clinical surgery. Wound healing in the skin and the formation of cicatrices, reparative processes of the different tissues and their reactions to surgical manipulations are shown experimentally. Considerable attention is paid during the course to the surgical infections and their effects on the organism. The principles of bacteriolysis, the excretion of microörganisms by means of the lymphatics through the lungs, liver, and kidneys, the new formation of blood vessels and lymphatics, and the fate of absorbable suture material are demonstrated on animals. The students are required to make naked-eye descriptions of fresh surgical material and to carry through various portions of these tissues for subsequent microscopic examination. The special pathology of tumors and the infectious granulomata is discussed and illustrated by means of fresh preparations and Kaiserling specimens. The work in this course is given entirely in the laboratory and will be wholly practical.

Third year, 12 hrs. a week, 9 weeks. 2 units.

4. **Operative Surgery on the Cadaver.** Dr. Barbat.

The classical operations in the abdomen are performed by the students of the class individually, imitating as closely as possible the arrangement and technique of the operating room.

Fourth year, 2 hrs. a week, 9 weeks. ½ unit.

5. **Operative Surgery on the Cadaver.** Dr. Kugeler.

This is an extension of Course 4, in which the surgery of the extremities is studied by practical operations on the cadaver under the same technical arrangements as in Course 4.

Fourth year, 2 hrs. a week, 9 weeks. ½ unit.

6. **Wound Dressing, Minor Surgery, and Bandaging.** Dr. Terry.

This course includes the technique of wound dressing and operative treatment. Various methods of bandaging of minor surgical operations are included in this course.

Third year, 3 hrs. a week, one half-year. 1 unit.

7. **Ward Classes.** Dr. L. W. Allen.

The students under the direction of the officers of instruction are given charge of a series of cases for which they are made responsible. History taking, routine clinical examination, diagnosis, treatment, and subsequent care of the patient are included in this course.

Fourth year, 2 hrs. a week through 1 semester. ⅔ unit.

8. **Surgical Dispensary.**

Drs. Russ, Robarts, Bush, and Schwartz.

This course is given upon the ambulatory material at the outpatient department, and presents in an advantageous manner the particular aspects of surgical ambulatory material. The instruction is entirely practical. Students are assigned to cases, take their histories, conduct their examinations, and carry through the treatment in large part themselves.

Third year, 6 hrs. a week, 1 term.

MICROSCOPICAL AND CHEMICAL DIAGNOSIS.

Philip King Brown, A.B., M.D., Instructor in Clinical Pathology.

Herbert F. Allen, M.D., Assistant in Clinical Pathology.

It is the purpose of this instruction to give the students practical and effective training in the use of those methods and principles of microscopic anatomy, pathology, and physiology, which are of assistance to the clinician in reaching a diagnosis. It aims to act as connecting link between the work of the preclinical and the clinical years.

1. **Microscopical and Chemical Diagnosis.**

Drs. Brown and Allen.

This course serves as an introduction to the students' work in practical medicine and surgery and is given almost exclusively by the laboratory method. A simple, effective, well equipped, well lighted laboratory accommodating one-half the class is situated on the grounds of the City and County Hospital, from the wards of which material for the course is obtained. During the year routine instruction is given on the normal and pathological conditions of the blood, with thorough training in the various methods of its examination, such as the examination of fresh specimens, hæmaglobin estimations, and the study of dried and stained preparations. The anæmiæ following this and the condition of the blood in all diseases in which blood examinations tend to aid the clinician in his work are thoroughly considered. In every instance material for the class is obtained from cases in the wards. If these do not exist, specimens from the cabinet are used for purposes of instruction. Considerable time is devoted to a thorough study of the malarial blood, together with a life history of the parasites and the modes of transmission of the diseases. The examination of the urine in various diseases forms an important part of the course, and for this purpose the newer and more effective methods are used. The examination of the sputum and feces in health and disease, together with a brief review of parasitology and the methods of diagnosis of parasitic diseases, are taken up with practical laboratory methods.

Through the courtesy of the officials at the Presidio, the secretions and excretions of patients suffering from tropical diseases can be obtained for the use of the class. Considerable emphasis will be laid on this feature of the work, since the acquisition of our new insular territories has greatly increased the trade between California and the Orient, and thus renders essential the protection of the State from the introduction of various tropical diseases. This demands the thorough training of students in work of this kind.

The course concludes with a thorough analysis of the gastric secretions and contents, exudates and transudates.

Third year, 12 hrs. a week, 9 weeks. 2 units.

OBSTETRICS.

ALFRED BAKER SPALDING, M.D., Assistant Professor of Obstetrics.
RAWLINS CADWALLADER, M.D., Assistant in Obstetrics.

The work of the Department of Obstetrics is given by lectures, quizzes, demonstrations, and clinics. During the first half of the third year the special anatomy and physiology of the female pelvis and its contents are reviewed. Normal pregnancy, labor, and the puerperium are described in detail. During the second half of the third year abnormal pregnancy, labor, and the puerperium are discussed, and the students are given individual bedside instruction in the diagnosis and care of pregnant, parturient, and puerperal women. Throughout the year quizzes and demonstrations upon the subjects of the lectures are given for one hour each week. Questions of treatment are discussed and illustrated by means of charts, manikins, and specimens. Attendance upon at least five women in confinement is required.

1. **Lectures on Obstetrics.** Professor SPALDING.

Third year, lectures 2 hrs. a week throughout the year. 6 units.

Quiz and demonstration, 1 hr. a week.

2. Practical Obstetrics. Professor Spalding.

During the last half of the second year students are assigned in rotation for a two-weeks service at the San Francisco Maternity. This institution is situated in one of the poorest districts of the city and cares for a large number of pregnant women. The students live at the Maternity for two weeks, examine pregnant women, attend confinements, make daily post-partum visits, and care for both mother and baby. The student work is carefully supervised by the head of this department and his assistants at the dispensary. Personal instruction is given in abdominal palpation and auscultation and in pelvimetry. Careful and extensive histories and records of the patients are made and published annually.

Third year, 2 weeks for each student, second semester. 1 unit.

3. Ward Classes. Professor Spalding.

Senior students will be assigned work in the maternity wards under the control of the University. One clinic will be held before the class each week for ten weeks.

GYNECOLOGY.

Charles A. von Hoffmann, M.D., Professor of Gynecology.

Beverly MacMonagle, M.D., Lecturer on Gynecology.

A. J. Lartigau, M.D., Assistant in Gynecology.

William G. Moore, M.D., Assistant in Gynecology.

Instruction in gynecology is given during the third and fourth years. It is the aim of the department to train the students in those aspects of gynecology which relate to the general practice of medicine, and the purely operative specialism is given secondary consideration.

1. Clinics in Gynecology.

Professor von Hoffmann and Dr. Moore.

This course is given upon the material in the wards of the City and County Hospital. The clinic is combined with some bedside instruction. Cases are assigned to students, who are required to take their histories, conduct the physical examination, and make the diagnosis. When the case so assigned is brought into the clinic or the operating room, those students are called who have worked on the patient. In this manner the students are brought into close contact with the cases. In connection with this course, instruction in operative gynecology is given upon the cadaver (Winkel's Manikin). Minor operations and those designed for the repair of the genital tract after obstetrical injuries are either demonstrated to the students or performed by them.

Fourth year, 2 hrs. a week throughout the year. 2 units.

2. **Lectures in Gynecology.** Dr. LARTIGAU.

A systematic course of lectures, combined with practical demonstrations illustrating the normal gross and microscopic anatomy, pathology, and symptomatology. Especial emphasis is laid upon pathological work in this course.

Third year, 1 hr. a week throughout the year. 2 units.

3. **Dispensary Clinics.** Professor VON HOFFMANN and Dr. MOORE.

In this course, held at the Out-Patient Dispensary, students are made familiar with ambulatory cases. As it is the purpose of the course to train the students in making physical examinations and in the use of instruments, the instruction is given in sections, and is entirely practical.

Fourth year, 18 hrs. for each section. $\frac{1}{3}$ unit.

MEDICAL JURISPRUDENCE.

Lectures on Medical Jurisprudence. Dr. D'ANCONA.

A course of lectures upon the duties and rights of the medical witness, personal identification, malpractice, life insurance, death-bed declarations, signs of death, presumption of death, and the jurisprudence of insanity.

Third year, 1 hr. a week, second term.

ELECTIVES.

The elective clinical branches which are offered in the fourth year are of two kinds: electives presenting supplementary work, and electives offering special work.

The branches which offer supplementary work are pediatrics, clinical neurology, genito-urinary surgery, and orthopedic surgery.

Instruction in the general aspects of the diseases of children and of the nervous system is comprised in the work of the Department of Medicine. This general work is, in the elective subjects of pediatrics and clinical neurology, supplemented by specialized work. Instruction in the general aspects of genito-urinary surgery and orthopedic surgery is included in the work of the Department of Surgery. This general work is supplemented by specialized work in the elective courses.

The special electives are diseases of the skin, diseases of the eye, and diseases of the ear, nose, and throat. In these courses is included the sole instruction offered in these subjects.

Students carry three electives, one of which must be pediatrics, diseases of the skin, or clinical neurology. Work in the elective branches is largely of a practical nature. It is the intention of the Faculty in the near future to increase the electives in the clinical as well as in the preclinical years.

PEDIATRICS.

William B. Lewitt, M.D., Professor of Pediatrics.

Sanford Blum, M.D., Instructor in Pediatrics.

A. J. Lartigau, M.D., Assistant in Pediatrics.

The courses in pediatrics consist of lectures, recitations, conferences, and practical work in the Out-Patient Dispensary. The dispensary affords an extremely favorable field for the observation of the diseases peculiar to children.

1. **Lectures and Recitations.** Professor Lewitt.

Consideration is given to those ailments of children most frequently met with; particular attention is devoted to the infectious diseases of infancy and childhood and to the subject of infant feeding.

Fourth year, 1 hr. a week throughout the year. 2 units.

2. **Dispensary Clinics.** Dr. Blum and Dr. Lartigau.

In the dispensary work the students are brought into direct contact with the cases, and in this manner the diseases are systematically studied.

Fourth year, 2 hrs. a week throughout the year. $1\frac{1}{3}$ units.

DISEASES OF THE SKIN.

Douglass W. Montgomery, M.D., Professor of Diseases of the Skin.
Howard Morrow, M.D., Instructor in Diseases of the Skin.
Lionel S. Schmitt, M.D., Assistant in Diseases of the Skin.
Florence McCoy Hill, M.D., Assistant in Diseases of the Skin.
George C. Culver, M.D., Assistant in Diseases of the Skin.

1. **Diseases of the Skin.** Professor Montgomery and Dr. Morrow.

The instruction in the department consists in:—

(*a*) A review of the histology and microscopic anatomy of the skin.

(*b*) The study of the pathology and bacteriology of the various cutaneous lesions. So far as possible the instruction in this aspect of the subject is carried parallel to the clinical study of individual cases. In the event of the absence of direct clinical material bearing upon any particular disease, this plan is supplemented by the demonstration and examination of museum specimens and collected tissues.

(*c*) Practical work in the dermatological clinic. Instruction is founded upon the anatomy and pathology, as elucidated in the previous sections. The work is purely practical and individual; no didatic teaching is included.

Fourth year, 2 hrs. a week throughout the year. 2 units.

CLINICAL NEUROLOGY.

Leo Newmark, M.D., Professor of Clinical Neurology.

The course of instruction in diseases of the nervous system comprises lectures, clinics, demonstrations, and practical work.

1. **Clinic in Neurology.** Professor Newmark.

The work in this course is entirely practical and covers the exhibition of selected dispensary cases and the training of students in the methods of conducting physical examinations on neurological cases and in testing the reactions of degeneration, sense, and perception. Patients suffering from various diseases of the nervous system are shown, questions of diagnosis and prognosis considered, followed by a discussion of the pathological lesions shown by these patients. These discussions are illustrated by numerous pathological specimens prepared by the newer neurological methods.

Fourth year, 1 hr. a week throughout the year. 1 unit.

DEPARTMENT OF OPHTHALMOLOGY.

GEORGE HERMAN POWERS, M.D., Professor of Ophthalmology.

CARL S. G. NAGEL, M.D., Instructor in Ophthalmology.

ANNA M. FLYNN, Assistant in Ophthalmology.

Instruction in ophthalmology is given at the City and County Hospital and at the Out-Patient Dispensary. Operative cases are shown at the hospital, while valuable material for diagnosis and treatment is obtained from the ambulatory cases at the dispensary.

1. **Ophthalmology.** Professor POWERS, Drs. NAGEL and FLYNN.

In this course the pathology, diagnosis, and treatment of the diseases of the eye are covered by means of lectures and practical work.

Fourth year, 3 hrs. a week throughout the year; 1 lecture, 2 hrs. practical work a week. $3\frac{1}{3}$ units.

OTOLOGY, RHINOLOGY, AND LARYNGOLOGY.

ALBERT B. MCKEE, M.D., Instructor of Diseases of the Ear, Nose, and Throat.

WALTER F. FINNIE, M.D., Assistant in Diseases of the Ear, Nose, and Throat.

JAMES A. ELLIS, M.D., Assistant in Diseases of the Ear, Nose, and Throat.

Instruction in otology, rhinology, and laryngology is given at the City and County Hospital and at the Out-Patient Dispensary. The ambulatory cases are studied at the dispensary, while the operative cases are demonstrated at the clinic at the City and County Hospital.

1. **Otology, Rhinology, and Laryngology.**

Dr. McKee and Assistants.

Clinic and dispensary course.

Fourth year, 3 hrs. a week throughout the year; 1 hr. clinic, 2 hrs. practical work one half-year. $1\frac{2}{3}$ units.

DEPARTMENT OF GENITO-URINARY SURGERY.

John Marshall Williamson, M.D., Professor of Genito-Urinary Surgery.

John C. Spencer, M.D., Assistant Professor of Genito-Urinary Surgery.

Cecil M. Armistead, M.D., Assistant in Genito-Urinary Surgery.

E. L. Wemple, Jr., M.D., Assistant in Genito-Urinary Surgery.

Instruction in genito-urinary surgery is given at the Out-Patient Dispensary. A large number of cases illustrating the various diseases of the genito-urinary tract pass under the observation of the class. Students are thoroughly drilled in the methods of diagnosis and the operative procedures required in the treatment of this class of patients.

1. **Genito-Urinary Surgery.**

Professor Williamson and Assistants.

This course is entirely practical and is given at the Out-Patient Dispensary on ambulatory cases.

Four hrs. a week throughout the year; 1 clinic a week, 3 hrs. practical work. 3 units.

ORTHOPEDIC SURGERY.

—— ——, Professor of Orthopedic Surgery.

Samuel J. Hunkin, M.D., Instructor in Orthopedic Surgery.

James T. Watkins, M.D., Assistant in Orthopedic Surgery.

1. **Orthopedic Surgery.** Drs. Hunkin and Watkins.

This course is entirely practical and is given at the Out-Patient Dispensary on ambulatory cases. The diagnosis and treatment of diseases of the joints and the correction of special deformities are considered. Special attention is paid to the making of splints and the application and fitting of braces.

Fourth year, 3 hrs. a week throughout the year. 2 units.

GRADUATES, 1906.

Alexander Adler, B.S. (Univ. of Cal.)	San Francisco
Olive Violet Brasier	Butte, Montana
Antonio Menotti dal Piaz	San Francisco
Sidney Ray Dannenbaum	San Francisco
Alex Vincent Doran	San Francisco
William Cooper Eidenmüller, B.S. (Univ. of Cal.)	Berkeley
John Henry Franklin	Gilroy
Samuel Percy Hardy	Oakland
Wilfred Bertram Hays	San Francisco
George Graham Hunter	Bakersfield
Louise Mary Igo	San Francisco
Charles Brekenfeld Jones	Sacramento
Herman Kronenberg	San Francisco
David Joseph Mahan	Eureka
Richard Leon Ochsner	Sacramento
Waid James Stone	San Francisco
Jackson Temple, Ph.G. (Univ. of Cal.)	Santa Rosa
Joseph Thomas Wrenn	Placerville
Reuben Sylvester Zumwalt	Yuba City

MATRICULATES, 1905-06.

FOURTH-YEAR CLASS.

Alexander Adler, B.S. (Univ. of Cal.)	San Francisco
Olive Violet Brasier	Butte, Montana
Antonio Menotti dal Piaz	San Francisco
Sidney Ray Dannenbaum	San Francisco
Alex Vincent Doran	San Francisco
Howard Palmer Dunbar	San Francisco
William Cooper Eidenmüller, B.S. (Univ. of Cal.)	Berkeley
John Henry Franklin	Gilroy
Samuel Percy Hardy	Oakland
Wilfred Bertram Hays	San Francisco
George Graham Hunter, B.S.	Bakersfield
Louise Mary Igo	San Francisco
Charles Breckenfeld Jones	Sacramento
Herman Kronenberg	San Francisco
David Joseph Mahan	Eureka
Richard Leon Ochsner	Sacramento
*Leo Lloyd Sexton	San Francisco
Gifford Lyne Sobey, A.B. (Stanford)	San Francisco
Waid James Stone	San Francisco
Jackson Temple, Ph.G. (Univ. of Cal.)	Santa Rosa
Joseph Thomas Wrenn	Placerville
Reuben Sylvester Zumwalt	Yuba City

THIRD-YEAR CLASS.

Frederick Madison Allen, A.B. (Univ. of Cal.)	Pomona
Archie Addison Alexander, A.B. (Univ. of Cal.)	Haywards
Elmer Wiley Bingaman	Soledad
Wilfred Everett Bixby	Oakland

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* Special student.

John Aloysius Clark, A.B. (St. Clara College)	Gilroy
Lloyd Alexander Craig	San Francisco
William Calhoun Dawson	Eldridge
Cornelius Thomas Devine, A.B. (St. Clara College)	Berkeley
Thomas Garfield Dodds	Kern City
Harry Emerson Foster	Oakland
Anna Maria Gutzwiller, B.S. (Univ. of Cal.)	St. Helena
Walter Orrin Howell	Hopland
James Harvey Johnston	Auckland, New Zealand
Alfred Dow Long	San Francisco
Earl Emmet Ostrom	Marysville
Romilda Paroni, B.S. (Univ. of Cal.)	Berkeley
Charles Arthur Pauson, B.S. (Univ. of Cal.)	San Francisco
Edward August Peterson, B.S. (Univ. of Cal.)	Auburn
Mehitabel Clara Proctor	Berkeley
Otto Theodor Schulze, B.L. (Univ. of Cal.)	Dixon
Middleton Pemberton Stansbury, B.S. (Univ. of Cal.)	Chico
Thomas Albion Stoddard, B.S. (Univ. of Cal.)	Santa Barbara
Florence Mabel Sylvester, B.L. (Univ. of Minn.)	Berkeley
Gavin James Telfer	San José
Allen Moore Walcott	Oakland

SECOND-YEAR CLASS.

Lela June Beebe, A.B. (Stanford Univ.)	San Francisco
LeRoy Hewitt Briggs, Jr.	Oakland
Alexander Sterling Bunnell, B.S. (Univ. of Cal.)	Berkeley
Sanford Warren Cartwright, Ph.G., B.S. (Univ. of Cal.)	Berkeley
Ensang Ching	Honolulu, Hawaiian Islands
Herbert Jacob Cohn	Carson City, Nevada
Frank Edward Frates, B.S. (St. Mary's College)	Ione
Richard Warren Harvey, B.S. (Univ. of Cal.)	San Francisco
Louis Philippe Howe	San Francisco
Samuel Nicholas Jacobs, B.S. (Univ. of Cal.)	Oakland
Frederick Clinton Lewitt, B.S.	San Francisco

Thomas Drummond Mansfield, A.B. (Univ. of Cal.)	Haywards
Albert Manson Meads, B.S.	Oakland
Wallace Longfellow Meyers, Ph.G. (College of Physicians and Surgeons, San Francisco)	San Francisco
Jee Shin Fwe Pond Mooar	San Francisco
Alvin Powell	Oakland
Robert Thomas Sutherland, B.S.	Oakland

First-Year Class.

Irving Steiger Cooper	Berkeley
Marian Osgood Hooker	Los Angeles
Harry Wilbur Irwin	Sacramento
William Crawford Mackintosh	San Francisco
Charles Leland McVey	Oakland
Chester Biven Moore	San José
Howard Christian Naffziger	Nevada City, California
Eric Julius Rosenstirn	San Francisco
Margaret White	Berkeley